# CONTENTS

## NUMBER 1


| | | |
|---|---|---|
| | i | Contributors to this issue |
| | ii | Deposition of crystallographic data |
| **N. A. Ogorodnikova** and D. N. Kravtsov | 1 | The use of fluorine-19 NMR data in the determination of the electron density on the benzene ring in arene metal complexes |
| R. Benn, T. H. Brock, M. C. F. B. Dias, **P. W. Jolly,** A. Rufińska, G. Schroth, K. Seevogel and B. Wassmuth | 11 | $\eta^3$-Allyl complexes of tungsten—I. Preparation and reactions of $[(\eta^3\text{-}C_3H_5)_3WCl]_2$ |
| R. Benn, T. H. Brock, **P. W. Jolly,** A. Rufińska and G. Schroth | 23 | $\eta^3$-Allyl complexes of tungsten—II. Reaction of $[(\eta^3\text{-}C_3H_5)_3WCl]_2$ with organomagnesium compounds |
| **L. M. Green** and D. W. Meek ✣ | 35 | Synthesis of polyphosphine ligands containing trimethylene linkages and platinum(II)–polyphosphine complexes |
| **S. Milićev,** B. Družina and B. Volavšek | 47 | Synthesis, thermal decomposition and powder diffraction data of ammonium decafluorouranate(VI), $(NH_4)_4UF_{10}$ |
| **D. Braga** and F. Grepioni | 53 | Reorientational processes in solid $(C_6H_6)_2Cr$, $(C_6H_6)Cr(CO)_3$ and $(C_6H_5Me)Cr(CO)_3$ |
| **F. J. Lalor,** S. M. Miller and (in part) N. Garvey | 63 | Poly(benzotriazolyl)borates—I. Ligand synthesis and characterization |
| **Â. Domingos,** N. Marques and A. Pires de Matos | 69 | Uranium poly(pyrazol-1-yl)borate complexes: X-ray crystal structures of $UCl_2Cp[HB(3,5\text{-}Me_2Pz)_3]$ and $UCl_3[HB(3,5\text{-}Me_2Pz)_3]$ |
| M. P. Diebold, B. F. G. Johnson, **J. Lewis, M. McPartlin** and H. R. Powell | 75 | The synthesis of dicopper–hexaosmium clusters; X-ray structure analysis of the new heteronuclear cluster dianion $[Cu_2Os_6(CO)_{18}I_2]^{2-}$ as its $[PPh_3Me]^+$ salt |
| J. Costa Pessoa, R. L. Marques, L. F. Vilas Boas and **R. D. Gillard** | 81 | Oxovanadium(IV) and amino acids—III. The system L-aspartic acid + $VO^{2+}$; a potentiometric and spectroscopic study |
| M. H. Abu-Elenien, N. I. Al-Shatti, M. A. Hussein and **Y. Sulfab** | 99 | Kinetics and mechanism of the oxidation of diethylene-triaminepentaacetatocobaltate(II) by periodate |
| **H. S. Rzepa** and J. D. Woollins | 107 | A PM3 SCF–MO study of the structure and bonding in the cage systems $S_4N_4$ and $S_4N_4X$ ($X = N^+$, $N^-$, S, $N_2S$, $P^+$, C, Si, $B^-$ and $Al^-$) |
| **R. A. El-Zaru** and H. A. Hodali | 113 | Kinetics of oxidation of ascorbic acid by octa-cyanomolybdate(V) in aqueous methanol—a comparative study |
| **P. O'Brien** and N. B. Sellers | 119 | A study of the reaction between chromium(III) hexaammine and glycine in a melt |
| **P. C. Srivastava,** A. Trivedi and P. Singh | 125 | Synthesis, characterization and $^1H$ NMR (experimental and theoretical) spectral studies of some neutral and anionic complexes of diphenyl tin isocyanate chloride |
| **D. W. Allen** and P. E. Cropper | 129 | Further studies of the kinetic coordination template effect in the metal-ion catalysed formation of arylphosphonium salts |

**Zhang Hualin** and Zhang Xu 137 Kinetics and mechanism of the reaction of nitrilotriacetatochromium(III) with Solochrome Yellow 2G

*Communication*

**O. W. Howarth** and J. J. Hastings 143 Monotungstononavanadate and *mer*-tritungstotrivanadate

*Book Review*

**A. G. Davies** 147 Gmelin Handbook of Inorganic Chemistry, 8th edn, Boron Compounds, Formula Index for 3rd Supplement Volumes 1–4

*Announcement*

I Annual Polyhedron Publication Award

NUMBER 2/3

POLYHEDRON SYMPOSIA-IN-PRINT NUMBER 10

## ALUMINIUM, GALLIUM AND INDIUM

*Guest Editor:* A. R. BARRON

iii Contributors to this issue

iv Deposition of crystallographic data

v Announcement: Polyhedron Symposia-in-Print

**A. R. Barron** 149 Foreword

**D. J. Clevette** and **C. Orvig** 151 Comparison of ligands of differing denticity and basicity for the *in vivo* chelation of aluminium and gallium

**G. E. Jackson** 163 Aluminium, gallium and indium in biological fluids—a computer model of blood plasma

**A. E. Martell**, R. J. Motekaitis and R. M. Smith 171 Aluminium complexes of hydroxyaliphatic and hydroxy-aromatic ligands in aqueous systems—some problems and solutions

**I. Sóvágó**, **T. Kiss** and **R. B. Martin** 189 2,3-Diphosphoglycerate binding of $Zn^{2+}$ and $Al^{3+}$

**R. B. Martin** 193 Aluminosilicate stabilities under blood plasma conditions

**L.-O. Öhman** 199 Equilibrium and structural studies of silicon(IV) and aluminium(III) in aqueous solution—XXIII. A potentiometric study of the composition and stability of aluminium complexes with nitrilotriacetic acid

**M. J. Taylor** 207 Spectroscopic studies of gallium complexes in solution

**K. Saito** and A. Nagasawa 215 Kinetic studies of ligand substitution reactions of aluminium, gallium and indium

K. Maruoka, N. Hirayama and **H. Yamamoto** 223 A new preparative method for various metal enolates

A. V. Seleznev, **D. A. Bravo-Zhivotovskii**, T. I. Vakul'skaya and M. G. Voronkov 227 The effect of aluminium alkoxides on single electron transfer reactions. A convenient synthetic route to (N,N-dialkylcarbo-moyl)germanes

M. B. Power and **A. R. Barron** 233 Sterically crowded aryloxide compounds of aluminium—reactivity of coordinated benzaldehyde

B. Çetinkaya, P. B. Hitchcock, H. A. Jasim, **M. F. Lappert** and H. D. Williams 239 Butyl metal aryloxides, arylamides, and sulphur and phosphorus analogues—II. Synthesis and characterization of novel bulky alkoxides and aryloxides of aluminium; X-ray structure of $[Al(\mu\text{-}OCH_2Ar)Me_2]_2$ ($Ar = C_6H_2Bu^t_3$-2,4,6)

P. B. Hitchcock, H. A. Jasim, **M. F. Lappert** and H. D. Williams 245 Bulky metal aryloxides, arylamides and sulphur and phosphorus analogues—III. Aluminium compounds derived from 2,4,6-tri-t-butylaniline; X-ray structure of $[AlMe\{\mu\text{-}NHC_6H_2Bu^t_2\text{-}4,6\text{-}C(Me)_2CH_2\text{-}2\}]_2$

**M. H. Chisholm,** V. F. DiStasi and W. E. Streib 253 Kinetic control in the alcoholysis reaction involving hexakis-dimethylamidodialuminium and tert-butanol. Preparation, crystal and molecular structures of $Al(OBu^t)_3(HNMe_2)$ and $Al_2(NMe_2)(OBu^t)_5$

K. M. Waggoner, M. M. Olmstead and **P. P. Power** 257 Structural and spectroscopic characterization of the compounds $[Al(NMe_2)_3]_2$, $[Ga(NMe_2)_3]_2$, $[(Me_2N)_2Al\{\mu\text{-}N(H)1\text{-}Ad\}]_2$ (1-Ad = 1-adamantanyl) and $[\{Me(\mu\text{-}NPh_2)Al\}_2NPh(\mu\text{-}C_6H_4)]$

A. Looney and **G. Parkin** 265 Poly(pyrazolyl)hydroborato and poly(pyrazolyl)methane aluminium alkyl derivatives

M. Layh and **W. Uhl** 277 Synthesis and molecular structure of a bis[di(alkyl)alanyl]-methane; $R_2Al{-}CH_2{-}AlR_2$ [$R = CH(SiMe_3)_2$]

**H. Schmidbaur,** R. Nowak, B. Huber and G. Müller 283 Synthesis and crystal structure of a mixed bis(arene)gallium(I) complex: dimeric ($\eta^6$-1,2,4,5-tetramethylbenzene)($\eta^6$-toluene)-gallium(I) tetrachlorogallate(III)

**L. K. Krannich,** C. L. Watkins and D. K. Srivastava 289 Multinuclear NMR studies of the reactions of $(Me_3Al)_2$ with $Me_2AsNMe_2$, $MeAs(NMe_2)_2$ and $As(NMe_2)_3$

**A. R. Siedle,** R. A. Newmark, W. M. Lamanna and J. N. Schroepfer 301 Exchange reactions between dialkylzirconocene and alkyl-aluminium compounds

C. M. Means, S. G. Bott and **J. L. Atwood** 309 Reduction of sugars with aluminium alkyls. Preparation and structure of $[AlCl_2(NC_5H_5)(OEt)]_2(\mu\text{-}O)(\mu\text{-}AlCl{\cdot}2NC_5H_5)$

M. F. Self, B. Lee, S. A. Sangokoya, W. T. Pennington and **G. H. Robinson** 313 Reaction of trimethylaluminium with sulphur derivatives of bis(diphenylphosphino)methane and bis(diphenylphosphino)-ethane. Synthesis and molecular structure of $[Al(CH_3)_2][(C_6H_5)_2P(S)CHP(S)(C_6H_5)_2][Al(CH_3)_3]$ and $[Al(CH_3)_3]_2[(C_6H_5)_2P(S)CH_2CH_2P(S)(C_6H_5)_2]$

**R. L. Wells,** C.-Y. Kwag, A. P. Purdy, A. T. McPhail and C. G. Pitt 319 Preparation and chemistry of $Me_3SiCH_2AsH_2$; preparation of $[Me_3SiCH_2(H)AsGaPh_2]_3$, a trimeric mono(arsino)gallane containing a hydrogen bonded to arsenic. Isolation and X-ray crystal structure of $(Me_3SiCH_2As)_5$

T. Douglas, **K. H. Theopold,** B. S. Haggerty and **A. L. Rheingold** 329 A phospholyl complex of indium

M. A. Banks, **O. T. Beachley, Jr,** J. D. Maloney and **R. D. Rogers** 335 The chemistry of diphenylphosphine adducts of tris(neopentyl) and tris(trimethylsilylmethyl)gallium and -indium including the crystal and molecular structure of $(Me_3CCH_2)_3Ga{\cdot}P(H)Ph_2$

**D. C. Bradley,** H. M. Dawes, **M. B. Hursthouse,** L. M. Smith and. M. Thornton-Pett 343 Adducts of trimethylgallium and perdeuteriotrimethylgallium with amine ligands and some dimethylgallium organyl pnictides (N, P, As). X-ray crystal structures of $[Me_3Ga{\cdot}NH(C_6H_{11})_2]$ and $[Me_3Ga{\cdot}NH(CHMe)(CH_2)_3CHMe]$

**H. Schumann,** U. Hartmann and W. Wassermann 353 Novel intramolecularly stabilized organogallium and organoindium compounds and their use in MOVPE

**R. Nomura,** S. Fujii, K. Kanaya and H. Matsuda 361 Oxygen- or sulphur-containing organoindium compounds for precursors of indium oxide and sulphide thin films

**O. Yamaguchi** and M. Shirai 367 Formation of alkoxy-derived $NbAlO_4$

**Y. Kimura,** S. Tanimoto, H. Yamane and T. Kitao 371 Coordination structure of the aluminium atoms of poly(methylaloxane), poly(isopropoxylaloxane) and poly[(acyloxy)aloxane]

*Reviews*

**D. G. Tuck** 377 Gallium and indium dihalides: a classic structural problem

**B. M. Bulychev** 387 A new stage in the development of transition metal alumohydrides

**J. P. Oliver** and R. Kumar 409 Structures and dynamic properties of aluminium–group 16 derivatives

**S. Pasynkiewicz** 429 Alumoxanes: synthesis, structures, complexes and reactions

*Announcement*

I Annual Polyhedron Publication Award

**NUMBER 4**

i Contributors to this issue

ii Deposition of crystallographic data

iii Announcement: Polyhedron reports

**POLYHEDRON REPORT NUMBER 30**

**S. R. Drake** 455 Electrochemical studies on iron, ruthenium and osmium carbonyl clusters

---

**W. Radecka-Paryzek** and E. Luks 475 The new triaza macrocyclic complex of yttrium

**Changtao Qian,** Xiuran Wang, Yuqin Li and Changqing Ye 479 Studies on organolanthanide complexes—XXIV. Syntheses of 1,1′-(xylylene)bis-$\eta^5$-cyclopentadienyl rare earth chlorides

**D. D. Agarwal,** S. Srivastava and P. Chadha 487 Epoxidation of olefins using a $CrO_3$/TBHP system

**D. M. L. Goodgame,** S. Newnham, C. A. O'Mahoney and **D. J. Williams** 491 Synthesis and crystal structure of 10-coordinate $[Th(C_5H_5NO)_6(NO_3)_2](NO_3)_2$ ($C_5H_5NO$ = 2-(1H)-pyridone)

A. K. Singh, V. Srivastava and **B. L. Khandelwal** 495 Hybrid telluride ligands—telluroamines 1-($NMe_2$)-2-(TeAr)-4-$MeC_6H_3$ (Ar = $C_6H_5$, 4-$MeOC_6H_4$ or 4-$EtOC_6H_4$): synthesis and complexation with palladium(II) and platinum(II)

M$^a$ J. Sánchez, B. Santana, F. Jiménez and **F. García Montelongo** 501 Complexation equilibria between cadmium(II) and 4-(4′-methyl-2′-thiazolylazo)-2-methyl-resorcinol. A spectrophotometric study

**G. E. Jackson** and M. Singh 505 Computer models of biofluids—an experimental verification

**G. Kura** and H. Waki 511 Cation-exchange and spectrophotometric study of copper(II)-cyclopolyphosphate complexes

A.-P. S. Mandair, P. J. Michael and **W. R. McWhinnie** 517 $^{29}Si$ MASNMR investigations of the thermochemistry of laponite and hectorite

S. S. Salam, C. J. Lovely, A. G. R. Poole, **C. J. Jones** and J. A. McCleverty — 527 — Monometallic, homo- and heterobimetallic complexes based on redox active tris(3,5-dimethylpyrazolyl)borato–molybdenum and –tungsten nitrosyls—I. *Meta* substituent effects on the reduction potentials of monometallic arylamide complexes

**M. B. Hursthouse,** K. J. Izod, M. A. Mazid and **P. Thornton** — 535 — Synthesis, properties and X-ray crystal structures of copper(II) and nickel(II) thiocyanate complexes with ethanolamine: a new structure for an aminoalkoxide cluster

**M. B. Hursthouse,** O. F. Z. Khan, M. Mazid, M. Motevalli and **P. O'Brien** — 541 — The X-ray crystal structures of the cadmium complexes of pyridine-1-thiol and mercaptobenzothiazole, $[Cd(C_5H_4NS)_2]_n$ and $[Cd(C_7H_4N_2S_2)_2]_n$: two unusual volatile polymeric complexes

**T. A. George,** L. M. Koczon, R. C. Tisdale, K. Gebreyes, L. Ma, S. N. Shaikh and **J. Zubieta** — 545 — Reactions of coordinated dinitrogen—XXII. Synthesis, characterization and reactions of hydrazido(2–) complexes of molybdenum. Crystal structures of two hydrazido(2–) complexes

**B. W. Tattershall** — 553 — Phosphorus–carbon nuclear magnetic coupling constants in phosphorus(III) cyanides

**P. P. Singh** and N. B. Singh — 557 — Studies on tetrametallic complexes of ferrocene

Ju-Sheng Qi, P. E. Fanwick and **R. A. Walton** — 565 — Reactions of the A-frame-like monocarbonyl complexes $Re_2(\mu\text{-}X)(\mu\text{-dppm})_2X_3(CO)$ (X = Cl or Br; dppm = $Ph_2PCH_2PPh_2$) with trimethylphosphine and trialkylphosphite ligands. The structural characterization of $[Re_2(\mu\text{-}Cl)(\mu\text{-}CO)(\mu\text{-dppm})_2Cl_2(PMe_3)_2]Cl$

M. T. Costello, D. R. Derringer, P. E. Fanwick, A. C. Price, M. I. Rivera, E. Scheiber, E. W. Siurek III and **R. A. Walton** — 573 — Studies directed towards the isolation and characterization of the paramagnetic cations $[Re_2X_4(LL)_2]^+$ (X = Cl or Br; LL = $Ph_2PCH_2PPh_2$, $Ph_2AsCH_2AsPh_2$ or $Ph_2PNHPPh_2$), and the crystal structure of $Re_2Cl_4(Ph_2PNHPPh_2)_2\cdot(CH_3)_2CO$

A. Becalska, J. D. Debad, H. K. Sanati and **R. H. Hill** — 581 — Electron paramagnetic resonance studies of the 19-electron complexes, $(\eta^5\text{-}C_5H_5)NiL_2$ (L = $PR_3$, $P(OR)_3$)

M. Lamoureux and **J. Milne** — 589 — Selenium chloride and bromide equilibria in aprotic solvents; a $^{77}Se$ NMR study

K. Wille, J. K. Moran and **D. M. Roundhill** — 597 — Mercury and methylmercury complexes of the 1-butyl and 1-hexadecyl esters of L-cysteine and 2,3-dimercaptosuccinic acid

**A. J. Nielson** and D. C. Ware — 603 — Organoimido complexes of tungsten(IV) containing π-acceptor ligands

*Communications*

S. C. Goel, K. S. Kramer, M. Y. Chiang and **W. E. Buhro** — 611 — Preparation and X-ray crystal structures of volatile copper(II) alkoxides

H. J. Banbery, F. S. McQuillan, **T. A. Hamor, C. J. Jones** and J. A. McCleverty — 615 — Incomplete coordination to rhenium(V) by a facultative quinquedentate ligand. The X-ray crystal structure of $[ReO(OMe)\{2'\text{-}(NC_4H_3\text{-}2\text{-}CH{=}N(CH_2)_3NMe(CH_2)_3CH{=}N{-})C_4H_3NH\}]PF_6$

M. Cano, J. V. Heras, **C. J. Jones,** J. A. McCleverty and S. Trofimenko — 619 — Sterically-induced rearrangements of the tripodal ligand $HB(Pr^iMeC_3N_2H)_3$ in some molybdenum mononitrosyl derivatives

**A. J. Deeming,** M. Karim, N. I. Powell and K. I. Hardcastle — 623 — Synthesis and structures of two isomers of $[Re_3Ru(S)(C_5H_4N)(C_5H_4NS)_2(CO)_{11}]$ which differ in the distribution of pyridine-2-thionato ligands between doubly- and triply-bridging positions

*Book Review*

**S. Cotton** 627 Gmelin Handbuch der Anorganischen Chemie: Fe—Organoiron Compounds

*Announcement*

I Annual Polyhedron Publication Award

NUMBER 5

i Contributors to this issue

ii Deposition of crystallographic data

**N. M. Shuaib, M. S. El-Ezaby** and R. Ghodsian 629 Complexes of vitamin $B_6$—XXI. The affinity of the binary complexes of the 2,2′-bipyridyl copper(II) system to the vitamin $B_6$ compounds

**E. Cesarotti,** M. Grassi and L. Prati 639 Optically active transition metal compounds, chiral at the metal centre. Synthesis and stereochemical studies of the chiral cyclopentadienyl iron complexes $[Fe(\eta^5\text{-}C_5H_5)\{(S)\text{-Prolophos}\}(CO)]PF_6$

**J. O. Dzięgielewski** and R. Grzybek 645 Application of the molybdenum(IV) hydride complexes in cyclohexane solutions to the radiation-catalytic reduction of molecular nitrogen

F. L. Lee, E. G. Gabe, L. E. Khoo, G. Eng and **F. E. Smith** 653 Synthesis of organotin complexes with ligands of biological significance

E. Huskowska, **J. Legendziewicz** and J. Hanuza 659 Absorption, luminescence, IR and Raman spectroscopy of a novel polynuclear neodymium compound: $Nd_2(OH)_3(ClO_4)_3 \cdot 5H_2O$

F. Rey, J. M. Antelo, **F. Arce** and F. J. Penedo 665 Equilibrium constants of metal amino acid complexes

C. J. Harlan, **R. A. Jones,** S. U. Koschmieder and C. M. Nunn 669 Reduction of tungsten complexes with primary phosphines and lithium dialkyl phosphides. X-ray crystal structures of $[(Cp^*WCl_2)_2 \cdot (t\text{-}Bu_2PPt\text{-}Bu_2)_2]$, $[(Cp^*WCl_4)(H_2PPh)]$, $[\{(PhN)WCl_2(PMe_3)_2\}_2(\mu\text{-}N_2)]$ and *trans*-$WCl_4(H_2Pt\text{-}Bu)_2$ ($Cp^* = \eta^5\text{-}C_5Me_5$)

**D. W. Allen,** N. A. Bell, L. A. March and I. W. Nowell 681 Crystallographically determined Se- - -O and P- - -O interactions in tris(2,4-dimethoxyphenyl)phosphine selenide and the 2,4,6-trimethoxy analogue. Correlations of P—Se bond lengths with $^{77}Se$ NMR data

B. J. Coe, **C. J. Jones,** J. A. McCleverty and D. W. Bruce 687 The synthesis, electrochemistry and thermal behaviour of some molybdenum mononitrosyl complexes incorporating long chain alkyl substituents

N. J. AlObaidi, **C. J. Jones** and J. A. McCleverty 693 The syntheses and electrochemistry of bimetallic complexes containing molybdenum mononitrosyl redox centres linked by saturated-$\alpha,\omega$-diamido bridging ligands

M. A. J. Moss and **C. J. Jones** 697 Heteroleptic polypyrazolylborate derivatives of the lanthanide ions. Bidentate ligand exchange reactions of $[Ln\{HB(C_3N_2H_3)_3\}_2(\beta\text{-diketonate})]$ (Ln = Ce, La, Sm, Eu, Yb, Lu)

E. W. Abel, **K. G. Orrell,** K. B. Qureshi and V. Šik 703 An NMR study of the fluxionality of group VI metal pentacarbonyl complexes of 1,3-dithiolanes

M. C. R. M. P. Basto and **A. A. S. C. Machado** 713 Copper(II) complexes with 1-(2-carbamylethyl)-2-alkylimidazoles

**D. C. Bradley,** H. Chudzynska, D. M. Frigo, M. E. Hammond, **M. B. Hursthouse** and M. A. Mazid 719 Pentanuclear oxoalkoxide clusters of scandium, yttrium, indium and ytterbium, X-ray crystal structures of $[M_5(\mu_5\text{-}O)(\mu_3OPr^i)_4(\mu_2\text{-}OPr^i)_4(OPr^i)_5]$ (M = In, Yb)

**A. C. Filippou** 727 Proton-induced coupling of a tert-butylisocyanide with a diethylaminocarbyne to yield an alkyne ligand at a single tungsten centre

**E. C. Alyea, G. Ferguson,** M. C. Jennings and Zheng Xu 739 The structure of a copper(I)–Schiff base complex $[CuN(CH_2\text{-}CH_2N{=}CH{-}C_6H_5)_3]^+[BPh_4]^-$

D. R. Derringer, E. A. Buck, S. M. V. Esjornson, P. E. Fanwick and **R. A. Walton** 743 Reactivity of complexes of the type $Re_2X_4(LL)_2$ towards bis(triphenylphosphine)iminium carboxylates. A convenient non-redox synthetic route to *cis* and *trans* isomers of $Re_2(O_2CR)_2X_2(LL)_2$ (R = $CH_3$, $C_2H_5$, $C_6H_5$ or 4-$C_5H_4N$; X = Cl or Br; LL = $Ph_2PCH_2PPh_2$ or $Ph_2AsCH_2AsPh_2$)

**A. L. Wayda, M. L. Kaplan,** A. M. Lyons and **R. D. Rogers** 751 Mixed-ligand imidazole complexes of organolanthanides

**E. Carmona,** P. Palma and M. L. Poveda 757 $\eta^3$-2-Methylallyl phosphine complexes of nickel(II)

I. Casals, **P. González-Duarte,** C. López and X. Solans 763 Synthesis and structure of a mononuclear zinc(II) complex of 2-(dimethylamino)ethanethiol

*Communications*

I. Casals, **P. González-Duarte,** J. Sola, J. Vives, M. Font-Bardia and X. Solans 769 Molecular structure of $\{[Ag_{13}(\mu\text{-}SC_5H_9NHMe)_{16}]^{13+}\}_n$, a novel one-dimensional non-molecular silver–thiolate

G. Barsuaskas, D. Lei, **M. J. Hampden-Smith** and E. N. Duesler 773 The first evidence for reductive coupling of transition metal substituted halogermanes

W. Mazurek, G. D. Fallon, P. J. Nichols and **B. O. West** 777 Synthesis and crystal structure determination of tetraphenylarsonium *p*-bromophenylthiochromate

781 Addendum

*Announcement*

I Annual Polyhedron Publication Award

**NUMBER 6**

i Contributors to this issue

ii Deposition of crystallographic data

**Zhou Yaokun,** Wang Zhiqiang, Wang Xin and Zhu Ying 783 Synthesis, characterization and structure of carboxylate derivatives of bis(methylcyclopentadienyl)titanium(IV)

**G. Crisponi,** V. Nurchi, M. L. Ganadu and G. Lubinu 789 Potentiometric and $^{13}C$ NMR study of the interaction between boric acid and pyrogallol (1,2,3-trihydroxybenzene)

S. Kunchandy and **P. Indrasenan** 795 Synthesis and IR spectral studies of some lanthanide nitrate complexes with 4-benzoyl-3-methyl-1-phenylpyrazol-5-one

| | | |
|---|---|---|
| **P. K. Baker** and E. M. Armstrong | 801 | Mono- and dinuclear phosphine coordinated 1,4-bis-(diphenylphosphino)ethyne seven-coordinate complexes of molybdenum(II) and tungsten(II) |
| B. Prabhakar, **P. Lingaiah** and K. Laxma Reddy | 805 | ESR and other spectral studies on copper(II) complexes with 2,3-disubstituted quinazoline-(3H)-4-ones |
| **D. F. Evans**, J. Parr and E. N. Coker | 813 | Nuclear magnetic resonance studies of silicon(IV) complexes in aqueous solution—I. Tris-catecholato complexes |
| **I. Sóvágó**, B. Radomska, I. Schön and O. Nyéki | 825 | Copper(II) and nickel(II) complexes of diastereomeric segments of thymopoietin |
| **H. Kozłowski**, J. Urbańska, I. Sóvágó K. Varnagy, A. Kiss, J. Spychała and K. Cherifi | 831 | Cadmium ion interaction with sulphur containing amino acid and peptide ligands |
| B. D. Steffey, N. Truong, D. E. Chebi, J. L. Kerschner, P. E. Fanwick and **I. P. Rothwell** | 839 | Synthesis and structure of some asymmetric aryloxide derivatives of zirconium(IV): X-ray crystal structures of $Cp_2Zr(OAr\text{-}2,4Me_2,6cyMe)(CH_2Ph)$ and $Cp_2Zr(OAr\text{-}2Me,6Bu^t)(\eta^2\text{-}Bu^tNCCH_2Ph)$, where OAr-2,4$Me_2$,6cyMe = 2,4-dimethyl, 6-(α-methylcyclohexyl)phenoxide and OAr-2Me,6$Bu^t$ = 2-methyl,6-tert-butylphenoxide |
| **A. Z. Al-Rubaie** and E. A. Al-Masoudi | 847 | Charge-transfer complexes of 5,6-dimethyl-1,3-dihydro-2-telluraindene with quinones |
| **A. K. Singh**, V. Srivastava and B. L. Khandelwal | 851 | Synthesis and ligand chemistry of bis[(2-aryltelluro)ethyl]amine and bis[(2-aryltelluro)ethyl]methylamine—novel (Te, N, Te) donors |
| Tang Ning, Gan Xinmin, Zhu Hailiang and **Tan Minyu** | 859 | Synthesis and characterization of lanthanide morpholine-4-carbodithioate complexes |
| A. Mishra, K. Mishra and **U. C. Agarwala** | 863 | Preparation and structural properties of mononuclear and binuclear ruthenium(II) cyclopentadienyl complexes with 4-cyanopyridine and 4-cyanopyridine 1-oxide |
| **Wai-Kwok Wong**, Hua Chen and Fong-Lung Chow | 875 | Synthesis and reactivities of lanthanide–ylidic complexes |
| S. Purohit, A. P. Koley and **S. Ghosh** | 881 | Chemistry of molybdenum with hard–soft donor ligands—III. Oxomolybdenum(VI) and *cis*-dioxomolybdenum(VI) mixed ligand complexes |
| | | *Communications* |
| **A. K. M. Anisuzzaman**, F. Alam and A. H. Soloway | 891 | Synthesis of a carboranyl nucleoside for potential use in neutron capture therapy of cancer |
| D. R. Baghurst, S. R. Cooper, D. L. Greene, **D. M. P. Mingos** and S. M. Reynolds | 893 | Application of microwave dielectric loss heating effects for the rapid and convenient synthesis of coordination compounds |
| | | *Book Reviews* |
| **D. M. Frigo** | 897 | Gmelin Handbook of Inorganic Chemistry—8th edn. Organotin Compounds, Part 16. By Herbert Schumann and Ingeborg Schumann |
| **R. J. Errington** | 899 | Gmelin Handbook of Inorganic Chemistry—8th edn. Re—Organorhenium Compounds, Parts 1 and 2. Edited by A. Slawisch |

**NUMBER 7**


i Contributors to this issue

ii Deposition of crystallographic data

**G. T. Hefter,** N. H. Tioh and C. B. Chan — 901 Fluoride complexes of zinc(II) and cadmium(II)

H. Loumrhari, **J. Ros,** M. R. Torres and A. Perales — 907 Reaction of $Ru(CO)Cl(RC{=}CHR')(PPh_3)_2$ with the 3,3-dimethylacrylate anion. The molecular structure of $Ru(O_2CCH{=}CMe_2)(CO)(C(CO_2Me){=}CH(CO_2Me))(PPh_3)_2$

**A. R. Butler,** A. M. Calsy and I. L. Johnson — 913 Enzyme inhibition by sodium nitroprusside

G. N. Pain, G. I. Christiansz, **R. S. Dickson,** G. B. Deacon, B. O. West, K. McGregor and R. S. Rowe — 921 Selection of organometallics for MOCVD of $Hg_{1-x}Cd_xTe$ and doped semiconductors

R. S. Hay-Motherwell, **G. Wilkinson,** B. Hussain and **M. B. Hursthouse** — 931 Alkyl complexes of cobalt(II). X-ray crystal structures of $(Me_2NCH_2CH_2NMe_2)CoR_2$, $R = CH_2SiMe_3$, $CH_2CMe_3$, $[(Me_2NCH_2CH_2NMe_2)Li]_2[Co(CH_2SiMe_3)_4]$ and $[(Me_2NCH_2CH_2NMe_2)_2Li][CoCl\{CH(SiMe_3)_2\}_2]$

**C. Bisi Castellani** and O. Carugo — 939 Studies on lanthanide complexes with pyronic ligands—III. Synthesis and characterization of novel complexes with 4-methylesculetin

T. N. Srivastava, J. D. Singh and **S. K. Srivastava** — 943 Synthesis, characterization and structural aspects of diorganotellurium(IV) compounds containing (Te—S) bonds

K. K. Fonda and **R. N. Grimes** — 949 Synthesis of $R_2R'_2C_4B_8H_8$ tetracarbon carboranes from ($\eta^6$-cyclooctatriene)iron(dicarbahexaborane) complexes via mixed-ligand thermal fusion

S. Cai, **D. M. Hoffman** and D. A. Wierda — 957 Structure of sodium dineopentyldioxorhenium(V)

B. D. Steffey, P. E. Fanwick and **I. P. Rothwell** — 963 Solid state structure of the tantalum bis-aryl compounds $Ta(OAr\text{-}2,6R_2)_3(C_6H_5)_2$ ($R = CH_3$, $Pr^i$; OAr-2,6$R_2$ = 2,6-dialkylphenoxide): observation of a lack of correlation of M—OAr distances and M—O—Ar angles for aryloxide derivatives of niobium(V) and tantalum(V)

D. E. Chebi, P. E. Fanwick and **I. P. Rothwell** — 969 Synthesis and solid state structure of some 2,6-diphenylphenoxide derivatives of rhodium(I) and iridium(I)

**A. H. Schwellnus,** L. Denner and J. C. A. Boeyens — 975 The crystal structure of lysidine·$HAu(CN)_2$—a model compound of a weak-base anion-exchange resin loaded with gold cyanide

**P. Karagiannidis,** P. Aslanidis, S. Papastefanou, D. Mentzafos, A. Hountas and A. Terzis — 981 Synthesis and characterization of copper(I) halide complexes with heterocyclic thiones and triphenylphosphine as ligands. The X-ray crystal structure of copper(I) 1-methyl-1,3-imidazoline-2-thione bis(triphenylphosphine)bromide, $[Cu(PPh_3)_2(meimtH)Br]$

I. P. Parkin, M. J. Pilkington, A. M. Z. Slawin, D. J. Williams, and **J. D. Woollins** — 987 The preparation and characterization of $Pt(Se_3PPh)(PR_3)_2$; the X-ray crystal structure of $Pt(Se_3PPh)(dppe)\cdot CH_2Cl_2$

P. Le Floch, L. Ricard and **F. Mathey** — 991 X-ray crystal structure analysis and reactivity of (2-chlorophosphinine)pentacarbonyltungsten complexes

N. J. Ali, P. A. Gillespie and **W. R. McWhinnie** 999 The chemistry of simple ceramic glazes—I. $^{57}Fe$ Mössbauer studies of iron-containing glazes and glasses

*Communication*

A. A. Danopoulos and **G. Wilkinson** 1009 Homoleptic *t*-butylimido compounds of osmium(VIII) and chromium(VI)

*Announcement*

I Annual Polyhedron Publication Award

NUMBER 8

i Contributors to this issue

ii Deposition of crystallographic data

R. N. Mohanty and **K. C. Dash** 1011 Binuclear dioxomolybdenum(VI) complexes containing bridging dioxime Schiff base ligands

S. M. M. H. Majumder, **M. Akbar Ali**, K. M. M. Rahman and F. E. Smith 1017 Metal ion induced rearrangements of 1,3,4-thiadiazolidine-2-thiones—I. The rearrangements of 3-methyl-5-(2-pyridyl)- and 3-methyl-5-(6-methylpyrid-2-yl)-1,3,4-thiadiazolidine-2-thiones with nickel(II), zinc(II) and cadmium(II) ions

**Ł. Ostropolska** 1021 Complexes of iron and cobalt tetrasulphonated phthalocyanines with horseradish peroxidase protein

**R. Singh** 1027 Synthesis and electrochemical studies of a macrocyclic complex of nickel(II) bearing a pyrrole unit

Z. Kožišková, **J. Kožíšek** and M. Kabešová 1029 Three different copper(II) coordination polyhedra in the crystal structure of bis(4-picoline)dithiocyanato copper(II) complex, $[Cu(4\text{-pic})_2(NCS)_2]$; experimental evidence of a new type of mutual influence of ligands in complexes

**A. Rodger**, S. M. Colwell and B. F. G. Johnson 1035 Bonding in boranes

**C. Díaz** 1045 Sulphurating and coordinating properties of N,N′-thiobismorpholine towards iron carbonyls

R. W. Chesnut, J. S. Yu, P. E. Fanwick, **I. P. Rothwell** and J. C. Huffman 1051 The cyclometallation of 2,6-diphenylphenoxide (OAr-2,6Ph$_2$) ligands at niobium(V) and tantalum(V) metal centres: the solid state structures of the monocyclometallated compounds $Ta(OC_6H_3Ph\text{-}C_6H_4)(OAr\text{-}2,6Ph_2)_2(R)$ ($R = CH_3$, $n\text{-}C_4H_9$) and $Nb(OC_6H_3Ph\text{-}C_6H_4)(OAr\text{-}2,6Ph_2)_2(Cl)$

**E. C. Alyea**, R. A. Gossage, J. Malito and Z. A. Munir 1059 Correlations of carbonyl stretching frequencies and $^{31}P$ and $^{95}Mo$ NMR parameters for *fac*-$[Mo(CO)_3(bipy)(PR_3)]$ complexes

N. K. Singh, U. Sharma, S. Agrawal and **M. J. M. Campbell** 1065 Synthetic, magnetic and spectral studies of iron(III) complexes of thiohydrazides and thiohydrazones

**J. W. Larson** 1071 Isotope effects in the acid-catalysed reactions of hypophosphorous acid

**P. J. Toscano**, K. J. Fordon, L. M. Engelhardt, B. W. Skelton, **A. H. White** and P. A. Marzilli 1079 The synthesis and isolation of the stereospecific ligand, *N*-(2-aminoethyl)-2-[(2-aminoethyl)thio]acetamide (egeH). Comparison of the crystal structure of $[Co(ege)(NO_2)_2]\cdot 4H_2O$ with related systems

K. Bayo, G. V. Ouedraogo, G. Terzian and **D. Benlian** 1087 UV-visible and IR spectra of iron(II) phthalocyanine polymer complexes linked by bis-pyridinato ligands

**P. D. Beer** and H. Sikanyika 1091 A Schiff base derived redox-responsive receptor molecule and related compounds with potential as non-linear optical materials

P. Bernhard, M. Biner and **A. Ludi** 1095 A modified synthesis of ruthenium(II) hexaaqua salts

**P. Planinić** and H. Meider 1099 Carbonyl and halocarbonyl complexes of molybdenum and tungsten with oxygen donor ligands

P. Palma-Ramirez, **D. J. Cole-Hamilton**, P. Pogorzelec (in part) and J. Campora (in part) 1107 Activation of aromatic C—H bonds by zerovalent ruthenium complexes of bis(dimethylphosphino)methane

R. S. Bates, M. J. Begley and **A. H. Wright** 1113 Synthesis and reactions of arene-ruthenium complexes containing nitrogen-donor ligands; crystal structure of (*p*-cymene)$_2$Ru$_2$Cl$_2$(N$_3$)$_2$

M. A. J. Moss and **C. J. Jones** 1119 Heteroleptic polypyrazolylborate derivatives of yttrium. The syntheses of [Y{HB(C$_3$N$_2$H$_3$)$_3$}$_2$(O$_2$CC$_6$H$_4$-*p*-Z)] (Z = NMe$_2$ and NO$_2$) and of [Y{HB(C$_3$N$_2$H$_3$)$_3$}(O$_2$CC$_6$H$_4$-*p*-Bu$^t$)$_2$]$_2$

*Communications*

**M. Kajitani**, R. Ochiai, R. Kikuchi, M. Okubo, T. Akiyama and **A. Sugimori** 1123 Formation of (η-cyclopentadienyl)(1,2-disubstituted 1,2-ethylenedithiolato)cobalt(III) and -rhodium(III) in reactions of (η-cyclopentadienyl)cobalt(I) or -rhodium(I) species with 1,4-dithiins

D. Lei, **M. J. Hampden-Smith** and E. N. Duesler 1127 Synthesis and characterization of a pyridine adduct of bis(irontetracarbonyl)germanium(IV)

*Announcement*

I Annual Polyhedron Publication Award


**NUMBER 9**


i Contributors to this issue

ii Deposition of crystallographic data

**A. H. Klahn** and C. Manzur 1131 Synthesis and characterization of alkoxycarbonylrhenium(III) complexes

A. Szymaszek and **F. P. Pruchnik** 1135 Electrochemical oxidation of tetra-(*S*)-mandelatodirhodium(II) and tetraformatodirhodium(II)

**A. Z. Al-Rubaie**, Y. N. Al-Obaidi and L. Z. Yousif 1141 Heterocyclic tellurium compounds as ligands; some complexes of rhodium(III) and rhodium(I)

**Ting-Chia Huang** and Teh-Hua Tsai 1147 Extraction equilibrium of cobalt(II) from sulphate solutions by di(2-ethylhexyl)phosphoric acid dissolved in kerosene

M. Baumgartner, H. Schmalle and **E. Dubler** 1155 Synthesis, characterization and crystal structure of copper(I) thiolates: [(C$_6$H$_5$)$_4$P$^+$]$_2$[Cu$_4$(C$_2$H$_5$S$^-$)$_6$]·0.5C$_2$H$_6$O$_2$ and [(C$_6$H$_5$)$_4$P$^+$][Cu$_7$(C$_2$H$_5$S$^-$)$_8$]

S. M. V. Esjornson, P. E. Fanwick and **R. A. Walton** 1165 Structural and spectroscopic studies on the trinuclear clusters Re$_3$Cl$_9$(PMe$_3$)$_3$ and Re$_3$Cl$_9$(η$^1$-dppm)$_3$ (dppm = Ph$_2$PCH$_2$PPh$_2$)

**P. O'Brien** and N. B. Sellers 1175 A study of the anation reaction of [Cr(NH$_3$)$_6$][C$_2$O$_4$]$_{1.5}$·2H$_2$O in the solid state

| | | |
|---|---|---|
| **M. E. Bodini** and M. A. Del Valle | 1181 | Redox chemistry and spectroscopy of 2-mercaptobenzoic acid and its manganese(II) and (III) complexes in dimethylsulphoxide |
| **J. Granifo** | 1187 | Reaction of the $M(CO)_3(NN)$ fragments (M = Mo, W; NN = bipy, phen, dipyam) with some organometallic halotin derivatives. Polynuclear complexes containing Sn–M–X moieties (X = Cl, Br, I) |
| **E. Casassas** and A. Izquierdo-Ridorsa | 1191 | Study of complex formation equilibria of pamoate ion with copper(II) ion in a dioxane–water solution |
| **R. Steudel**, D. Jensen and F. Baumgart | 1199 | $^{77}$Se-NMR and Raman spectroscopic characterization of selenium dibromide ($SeBr_2$) and its reaction with titanocene pentasulphide to give cyclic selenium sulphides of ring size 6, 7, 8, and 12 |
| K. J. Ewing, **S. i. Shupack** and A. L. Rheingold | 1209 | Tetrahalodimolybdate(II) complexes with alkyl substituted pyridines. A structural and spectroscopic study |
| **F. A. Cotton** and J. Czuchajowska | 1217 | Dibenzo[b,i][1,4,8,11]tetra-azacyclotetradecine complexes—I. $W(CO)_4$(tmtaa) |
| **F. A. Cotton** and J. Czuchajowska | 1221 | Dibenzo[b,i][1,4,8,11]tetra-azacyclotetradecine complexes—II. Ru(tmtaa)$(PMePh_2)_2$ |
| **S. Chapelle**, J. F. Verchère and J. P. Sauvage | 1225 | Relationship between structures and stabilities of molybdate complexes of alditols: a potentiometric, $^{13}$C and $^{95}$Mo NMR study |
| | | *Communications* |
| J. K. MacDougall and **D. J. Cole-Hamilton** | 1235 | Alcohols as sources of hydrogen in hydroformylation of alkenes |
| J. C. Menezes and **C. C. Romão** | 1237 | Preparation of $[Mo_2(O_2CCH_3)_4]$ and $[CrMo(O_2CCH_3)_4]$ from $M^{II}$ derivatives (M = Cr, Mo) |
| | 1241 | Corrigendum |
| | | *Announcement* |
| | I | Annual Polyhedron Publication Award |


**NUMBER 10**


| | | |
|---|---|---|
| | i | Contributors to this issue |
| | ii | Deposition of crystallographic data |
| **M. M. Taqui Khan**, R. C. Bhardwaj and C. Bhardwaj | 1243 | Ruthenium(II)–bipyrimidine complexes: characterization, spectroscopy and photoanation studies |
| **M. A. Fedotov**, B. Z. Pertsikov and D. K. Danovich | 1249 | $^{17}$O,$^{31}$P and $^{183}$W NMR spectra of paramagnetic complexes with the heteropolytungstate anion $[Ln(PW_{11}O_{39})_2]^{11-}$ and their constitution in aqueous solution. Ln—rare earth element |
| **E. A. Neves** and M. P. Peters | 1257 | Mixed-ligand complexes of copper(II) with pyridine |
| **L. Ciavatta**, M. Iuliano, R. Porto and E. Vasca | 1263 | Fluorogermanate(IV) equilibria in acid media |
| **M. H. Chisholm**, J. C. Huffman and J. A. Klang | 1271 | A convenient synthesis of trialkylalkylidyne tungsten (6+) compounds and the X-ray crystal structure of $(Me_3CCH_2)_3W{\equiv}CPh(py)$ |

J. Sabolović and **N. Raos** 1277 Critical evaluation of empirical force-field models for simulation of plasticity of copper(II) coordination

H. Mizuno and **M. Nonoyama** 1287 Thiophene ring cyclopalladation of N,N-dimethyl-2(or 3)-thiophenecarbothioamide

**W. L. Kwik** and A. W. N. Tay 1293 Mixed-ligand complexes of copper(II) containing a mono-condensed Schiff base and an amino acid or amine

**C. H. Bedel-Cloutour,** L. Mauclaire, M. Pereyre, S. Adams and M. Drager 1297 Crystal and molecular structure of 10-(4'-N-pyridyl)-5,15,20-triphenylporphinato indium(III) chloride

O. Poncelet, **L. G. Hubert-Pfalzgraf** and J-C. Daran 1305 Unexpected cleavage of acetylacetone induced by yttrium oxoisopropoxide: synthesis and molecular structure of $Y_2(\mu_2\text{-}OAc)_2(acac)_4(H_2O)_2$

D. Meyer, **J. A. Osborn** and M. Wesolek 1311 Synthesis and X-ray structure of monomeric aryloxide complexes of manganese(II) and chromium(II)

S. E. Saum, F. R. Askham, S. A. Laneman and **G. G. Stanley** 1317 The synthesis of heterobimetallic systems based on a hexatertiaryphosphine ligand system: cobalt–nickel and nickel–platinum complexes

**J. R. Dilworth,** S. K. Ibrahim, S. R. Khan, **M. B. Hursthouse** and A. A. Karaulov 1323 The synthesis, characterization and redox properties of oxo-complexes of rhenium(V) and (VII) with catechol ligands. The X-ray crystal structure of $[ReO_2(O_2C_6H_4)_2]^-$

**D. P. Arnold,** E. A. Morrison and J. V. Hanna 1331 Tin(IV) porphyrin complexes—III. NMR *trans*-influences in tin(IV) tetraphenylporphyrin complexes

*Communications*

**J. W. Connolly,** A. H. Cowley and C. M. Nunn 1337 Crystal structures of the PPN salts of the anions *trans*-$[SiCl_3(PPh_3)Fe(CO)_3]^-$ and *trans*-$[SiCl_3\{P(OPh)_3\}Fe(CO)_3]^-$

L. Ballester, A. Gutierrez-Alonso, **M. F. Perpiñán,** E. Gutierrez-Puebla and C. Ruiz-Valero 1341 X-ray crystal structure of $[Ni(S_2COC_6H_{11})_2(PMePh_2)]$. Asymmetric coordination of the O-cyclohexylxanthate ligand

**NUMBER 11**

i Contributors to this issue

ii Deposition of crystallographic data

iii Announcement: Polyhedron Reports

**POLYHEDRON REPORT NUMBER 31**

**T. P. Hanusa** 1345 New developments in the organometallic chemistry of calcium, strontium and barium

---

N. Maigrot, C. Charrier, L. Ricard and **F. Mathey** 1363 The 1,2-dihydro-1,2-diphosphete-1,4-diphosphadiene equilibrium. X-ray structures of $[\mu^2,\mu^2,\eta^1,\eta^1\text{-}(Ph)_8C_4P_4]W_2(CO)_6$ and $[\eta^1,\eta^1\text{-}(Ph)_4C_2P_2]W_2(CO)_{10}$

**N. G. Lukyanenko,** N. Yu. Nazarova, V. I. Vetrogon, N. I. Vetrogon and A. S. Reder 1369 Macroheterocycles—LVI. Complex formation of the cryptands containing two propylene fragments in one of the bridges with alkali and alkaline-earth cations

| | | |
|---|---|---|
| **M. Pilarczyk,** W. Grzybkowski and L. Klinszporn | 1375 | Coordination state of $Co(NCS)_2$ in acetone |
| T. Sh. Kapanadze, G. V. Tsintsadze, Yu. V. Kokunov and **Yu. A. Buslaev** | 1379 | Linkage isomerism in cobalt(III) complexes |
| **E. J. Baran,** P. A. M. Williams, R. S. Puche and J. Soria | 1383 | Electronic and magnetic properties of some divalent metal saccharinates |
| S.-P. Huang, S. Dhingra and **M. G. Kanatzidis** | 1389 | Synthesis, structure and $^{77}Se/^{119}Sn$ NMR spectroscopy of the new polyselenide, tris(tetraselenido)stannate(IV), $[Sn(Se_4)_3]^{2-}$ |
| **R. Gryboś** and W. Paw | 1397 | Synthesis and study of oxovanadium(IV) complexes with dithiobis(2,4-pentanedione) |
| **D. D. Agarwal,** S. Srivastava and P. Chadha | 1401 | Synthesis, characterization and catalytic behaviour of thorium peroxo complexes |
| **D. D. Agarwal,** R. Jain, R. P. Bhatnagar and S. Srivastava | 1405 | Synthesis and characterization of some peroxo complexes of zirconium |
| **F. Benetollo,** A. Polo, G. Bombieri, K. K. Fonda and **L. M. Vallarino** | 1411 | X-ray crystal structures and nuclear magnetic resonance spectra of macrocyclic complexes of neodymium(III) and europium(III) |
| **D. C. Bradley,** H. Chudzynska, J. D. J. Backer-Dirks, **M. B. Hursthouse,** A. A. Ibrahim, M. Motevalli and A. C. Sullivan | 1423 | Synthesis, photochemistry and X-ray crystal structures of the methyltris[bis(trimethylsilyl)amido] compounds $MeTi[N(SiMe_3)_2]_3$ and $MeZr[N(SiMe_3)_2]_3$ |
| | | *Communication* |
| E. Block, D. Macherone, S. N. Shaikh and **J. Zubieta** | 1429 | Silver(I) clusters of the sterically-hindered bidentate ligand, 3-(dimethylphenyl)silyl-2-pyridinethiol. The crystal and molecular structures of $[Ag(SC_5H_3N\text{-}3\text{-}SiMe_2Ph)]_6$ and $[Ag_8(SC_5H_3N\text{-}3\text{-}SiMe_2Ph)_6][Ag(NO_3)_2]_2 \cdot 2CH_3OH \cdot CH_2Cl_2$ |

**NUMBER 12**

| | | |
|---|---|---|
| | i | Contributors to this issue |
| | ii | Deposition of crystallographic data |
| | iii | Announcement: Polyhedron Best Paper Award 1989 for Inorganic and Organometallic Chemistry |
| A. J. Elias, **M. N. Sudheendra Rao** and B. Varghese | 1433 | Cyclic S—N compounds and phosphorus reagents—VII. Reactions of $S_4N_4$ with tertiary (amino)phosphines: synthesis and characterization of $(R_2N)_3PN\text{-}S_3N_3$ derivatives and their addition products with norbornadiene. X-ray crystal structure of $(C_5H_{10}N)_3PN\text{-}S_3N_3$ |
| **N. Singh,** R. Verma and N. K. Singh | 1441 | Preparation and spectroscopic characterization of some heterobimetallic complexes of 1,1-dicarboethoxy-2,2-ethylene dithiolate involving divalent and monovalent metal ions |
| **E. Carmona,** P. Palma and M. L. Poveda | 1447 | Neutral aminocarbene complexes of nickel from the reaction of $[Ni(\eta^2\text{-}C(NBu^t)CH_2CMe_3)(NC_4H_2Me_2)(PMe_3)]$ with diprotonic acids |
| Daoli Deng, Bing Li and **Changtao Qian** | 1453 | Syntheses of new organo-lanthanide complexes $[(CH_3OCH_2\text{-}CH_2C_5H_4)_2LnCl]_2$ and their XPS |

L. Petrilli and **F. Tarli** 1457 Copper complexes of the methyl ester of dithiocarbazic acid and its N(3)-substituted derivatives

T. Kaukorat, L. Ernst, **R. Schmutzler** and D. Schomburg 1463 The 4 - chloro - 2 - oxo - 1, 3, 5, 5, 8 - pentamethyl - 1, 3, 8 - triaza-5-azonia-4$\lambda^5$-phosphaspiro[3.4]octyl cation: X-ray crystal structure determination and variable temperature $^1$H NMR spectra

**M. Gullotti,** L. Casella, G. Pallanza, F. Laschi and P. Zanello 1469 Copper(I) complexes with ligand systems containing nitrogen and sulphur donor atoms. Spectroscopy and electrochemistry of the copper(II)/copper(I) couple

**J. Lakshmana Rao,** G. L. Narendra and S. V. J. Lakshman 1475 Optical absorption spectra of cobalt(II) and nickel(II) ions in lead acetate glasses

**H. G. Ang,** W. L. Kwik and P. T. Lau 1479 Coordinating properties of 2-pyridyldiphenylphosphine with some metal carbonyls

**P. O'Brien,** J. R. Walsh, **A. C. Jones** and S. A. Rushworth 1483 The preparation and characterization of bis(2,2-dimethylpropyl)cadmium(II) and its 2,2'-bipyridyl adduct

K. S. Ratliff, P. E. Fanwick and **C. P. Kubiak** 1487 Synthesis of a $\mu_3$-$\eta^1$ isocyanide triangular nickel cluster: X-ray crystal structure of $[Ni_3(\mu_3\text{-CNMe})(\mu_3\text{-I})(dppm)_3][I]$

**Shie-Ming Peng,** Gene-Hsiang Lee and **Yun Chi** 1491 Synthesis and crystal structure of a tetranuclear mixed-metal alkylidene complex $CpWOs_3(CO)_9(\mu\text{-O})(\mu\text{-H})(\mu\text{-CHTol})$

*Communication*

C. M. Archer, **J. R. Dilworth,** P. Jobanputra, R. M. Thompson, M. McPartlin, D. C. Povey, G. W. Smith and J. D. Kelly 1497 Development of new technetium cores containing technetium–nitrogen multiple bonds. Synthesis and characterization of some diazenido-, hydrazido- and imido- complexes of technetium

*Announcement*

I Annual Polyhedron Publication Award

**NUMBER 13**

i Contributors to this issue

ii Deposition of crystallographic data

iii Announcement: Polyhedron Reports

**POLYHEDRON REPORT NUMBER 32**

**F. Basolo** 1503 Kinetics and mechanisms of CO substitution of metal carbonyls

---

**F. Bedia Erim** 1537 A potentiometric study on the complexation between mercury(II) and phenolate ions

Shuncheng Liu, Lidun Ma, D. McGowty and **J. Zubieta** 1541 Molybdenum(VI) complexes of branched ligands with [N,O,O,O] and [O,O,O] donor sets. The crystal and molecular structures of $[MoO_2\{HOC_2H_4N(C_2H_4O)_2\}]$, $[(n\text{-}C_4H_9)_4N]_2[Mo_2O_4\{O_2NC(CH_2O)_3\}_2]\cdot 2O_2NC(CH_2OH)_3$, $[(n\text{-}C_4H_9)_4N]_2[Mo_2O_5\{HO_2CCH_2N(CH_2CO_2)_2\}_2]\cdot H_2O$ and $[(n\text{-}C_4H_9)_4N][Mo_3O_6(OCH_3)\{CH_3C(CH_2O)_3\}_2]$

Q. Feng and **H. Waki** 1555 $^{31}$P NMR study on the binding isomers of chromium(III) phosphinate complexes in solution

J. C. Fitzmaurice, A. M. Z. Slawin, D. J. Williams, **J. D. Woollins** and A. J. Lindsay 1561 The preparation of mixed-ligand dithiolene complexes: X-ray structure of $Pt(PMe_2Ph)_2(mnt)$ and $[Bu_4N][Au(mnt)_2]$

P. F. Kelly, A. M. Z. Slawin, D. J. Williams and **J. D. Woollins** 1567 Reaction of $Se_4N_4$ with $Pt(PPh_3)_3$: the preparation and X-ray structure of $[Pt(Se_2N_2)(PPh_3)]_2 \cdot CH_2Cl_2$

A. M. Arif, T. A. Bright, D. E. Heaton, **R. A. Jones** and C. M. Nunn 1573 Synthesis and structures of phosphine, phosphido and phosphinidene derivatives of triosmium from reactions of $R_2PH$ ($R = t$-Bu, cyclohexyl) with $Os_3(CO)_{12}$

**R. B. English** 1589 *Trans*-chloroacetatonitrosylbis(triphenylphosphine)rhodium

O. J. Vaughan and **J. F. Gibson** 1593 Coordination chemistry of N,N′-bis(2-hydroxyphenyl)ethylenediamine-N,N′-diacetic acid and some related ligands

G. A. Forsyth, **D. A. Rice** and K. Hagen 1603 An electron diffraction study of gaseous bis(pentan-2,4-dionato)oxovanadium(IV), $VO(CH_3COCHCOCH_3)_2$

A. Hetherington, **W. Levason** and M. D. Spicer 1609 Synthesis and copper-63 NMR studies of copper(I) stibine complexes

*Communications*

**E. C. Constable,** T. A. Leese and **D. A. Tocher** 1613 Structural characterization of bis(2,2′-bipyridine)[2-(2-pyridyl)-phenyl-*C*,*N*]rhodium(III) hexafluorophosphate; an analogue of a tris(2,2′-bipyridine) complex incorporating a *C*,*N*-donor ligand

J. E. Hill, J. M. Nash, P. E. Fanwick and **I. P. Rothwell** 1617 Structure and spectroscopic properties of $[(2,6\text{-}Ph_2C_6H_3O)_2Ti(\mu\text{-}Cl)_2Ti(OC_6H_3Ph_2\text{-}2,6)_2]$: evidence for a strong metal–metal interaction

*Book Review*

**E. C. Constable** 1621 Reactions of Coordinated Ligands, Volume 2. Edited by P. S. Braterman

*Announcements*

1623 Call for Papers. Polyhedron Symposium-in-Print: Homopolyatomic Silicon, Germanium and Tin Chemistry

I Annual Polyhedron Publication Award

**NUMBER 14**

i Contributors to this issue

ii Deposition of crystallographic data

**Cheng Wendan,** Zhang Qianer, Huang Jinshun and Lu Jiaxi 1625 A bonding model for $M_3X_3$ cluster compounds $M_3X_{4-n}Y_nL_9^c$ (M = Mo, W; X = O, S, Cl, Br; Y = O, S; L = terminal ligand; $n = 0, 1$; $c$ = charge)

**F. T. Esmadi** and M. K. Dohaidel 1633 Reactions of sulphur dioxide with palladium(II) complexes

C. Bisi Castellani and **O. Carugo** 1639 Studies on lanthanide complexes with pyrone ligands—V. Terbium(III) and europium(III) complexes with a new ligand derived from the condensation of 4-oxo-4H-benzopyran-3-carboxyaldehyde and 2-amino-4-chlorophenol

**Â. Domingos,** J. Marçalo, I. Santos and A. Pires de Matos 1645 Bis[hydrotris(pyrazolyl)borato]dichloroactinide(IV) complexes: X-ray crystal structures of $ThCl_2(HBPz_3)_2$ and $UCl_2(HBPz_3)_2$

C. R. Bhattacharjee, M. Bhattacharjee, **M. K. Chaudhuri** and S. Choudhury 1653 Preparation and reaction of salts of $[ZrO(O_2)F_2]^{2-}$ and $[ZrO(O_2)_2F]^{3-}$

| | | |
|---|---|---|
| B. Becker, W. Wojnowski, **K. Peters,** E.-M. Peters and H. G. von Schnering | 1659 | Contributions to the chemistry of silicon–sulphur compounds—LVII. Synthesis, molecular structure and properties of cyclo-tetrakis[tri-*tert*-butoxysilanethiolatocopper(I)], $[(t\text{-}C_4H_9O)_3\text{-}SiSCu]_4$, the first example of a square planar $Cu_4S_4$ ring |
| T. C. W. Mak, W.-H. Yip, C. H. L. Kennard and **G. Smith** | 1667 | Copper(II) carboxylate–carboxylic acid adducts: the crystal and molecular structure of tetrakis-[$\mu$-(2-phenoxybenzoato-*O,O'*)] -bis[(2-phenoxybenzoic acid)copper(II)] |
| H. Akashi, **T. Shibahara** and H. Kuroya | 1671 | Isolation and X-ray structure determination of a sulphur-bridged incomplete cubane-type molybdenum(IV) aqua cluster, $[Mo_3S_4(H_2O)_9](CH_3\cdot C_6H_4\cdot SO_3)_4\cdot 9H_2O$ |
| H. Schumann, A. M. Arif and **T. G. Richmond** | 1677 | Synthesis and reactivity of 1,2- and 1,4-dihydroxyarene complexes of chromium tricarbonyl |
| T. S. Cameron, **H. C. Clark,** A. Linden and A. M. Nicholas | 1683 | The structural effects of steric overcrowding in bis(tricyclohexylphosphine)platinum(II) complexes: the crystal and molecular structure of *trans*-$PtBr_2(PCy_3)_2$ |
| E. Babaian-Kibala, **F. A. Cotton** and P. A. Kibala | 1689 | Square, sulphur-bicapped tetraniobium cluster compounds |
| **K. R. Dunbar,** S. C. Haefner and A. Quillevéré | 1695 | Synthesis and characterization of $[\{2,4,6\text{-}(CH_3O)_3\text{-}C_6H_2\}_3P{=}O]FeCl_3$: a four-coordinate phosphine oxide adduct of $FeCl_3$ |
| **A. Ramachandraiah,** T. Sarojini, K. L. Reddy and **P. S. Zacharias** | 1703 | Synthesis and characterization of tetranuclear copper(II) complexes by continued complexation of a new class of binucleating ligand 3,3′-dimethoxy-4,4′-bis(1-alkyl(R)triazene-1-oxide)biphenyl |
| A-P. S. Mandair and **W. R. McWhinnie** | 1709 | The chemistry of ceramic glazes—II. The influence of the presence of the oxides $Na_2O$, CaO or $Al_2O_3$ on the thermolysis of laponite. $^{29}Si$, $^{23}Na$ and $^{27}Al$ MASNMR studies |
| **K. Murata,** S. Yamashita, E. Yamamoto and S. Ikeda | 1717 | Extraction of molybdenum(VI) from aqueous solution by donor solvents |
| M. C. Barral, **R. Jiménez-Aparicio,** C. Rial, E. Royer, M. J. Saucedo and F. A. Urbanos | 1723 | Synthesis and characterization of new carboxylate dimers of ruthenium |
| **R. Vicente,** A. Escuer, J. Ribas, A. Dei, X. Solans and T. Calvet | 1729 | Synthesis, structure and electrochemical behaviour of octahedral nickel(II) complexes with one 1,1-dithio and one macrocyclic ligand |
| S. F. Colson and **S. D. Robinson** | 1737 | Complexes of the platinum metals—XL. Homoleptic tris(1,3-diaryltriazenido) complexes of ruthenium(III), osmium(III), rhodium(III) and iridium(III) |
| J. A. Crayston, **C. Glidewell** and R. J. Lambert | 1741 | Redox properties of iron–sulphur–nitrosyl complexes: exploratory electrochemistry of mononuclear, dinuclear and tetranuclear complexes |
| **P. D. Beer** and H. Sikanyika | 1747 | A new chromophoric and redox-responsive ionophore containing a tricyanovinyl moiety |
| A. C. Dengel, **W. P. Griffith,** A. M. El-Hendawy and J. M. Jolliffe | 1751 | Halodioxoruthenate(VI) complexes as catalysts for the oxidation of alcohols |
| H. C. E. McFarlane, **W. McFarlane** and A. S. Muir | 1757 | 2,6-Bis(diphenylphosphino)pyridine: a convenient synthesis and complexation behaviour |

| | | |
|---|---|---|
| **D. M. L. Goodgame,** A. M. Khaled, C. A. O'Mahoney and D. J. Williams | 1765 | Synthesis and X-ray crystal structure of a chain polymer formed by 1-methylhydantoin with mercury(II) |
| **B. F. G. Johnson,** A. W. Bott, D. Hugh-Jones and A. Rodger | 1769 | Geometrical and orientational isomers in clusters |
| | | *Communication* |
| R. Han, M. Bachrach and **G. Parkin** | 1775 | Competitive alkyl and halide metathesis in the reactions of Grignard reagents with $Tl\{\eta^3\text{-}HB(3\text{-}Bu^tpz)_3\}$ |
| | | *Book Review* |
| **D. M. Frigo** | 1779 | Gmelin Handbook of Inorganic Chemistry. Ge—Germanium. (Organogermanium Compounds. Part 2) |
| | | *Announcement* |
| | I | Annual Polyhedron Publication Award |


**NUMBER 15/16**

POLYHEDRON SYMPOSIA-IN-PRINT NUMBER 11

## THE INTERPLAY OF THEORY AND EXPERIMENT IN INORGANIC CHEMISTRY

*Guest Editor*: B. E. BURSTEN


| | | |
|---|---|---|
| | iii | Contributors to this issue |
| | iv | Deposition of crystallographic data |
| | v | Announcement: Polyhedron Symposia-in-Print |
| | ix | Richard F. Fenske |
| **B. E. Bursten** | 1781 | Foreword |
| **D. L. Lichtenberger,** A. S. Copenhaver and J. L. Hubbard | 1783 | The electronic structure of nitrosyl and carbonyl supported metal–metal interactions. The photoelectron spectra of $[\eta^5\text{-}(C_5H_5)Fe(\mu\text{-}NO)]_2$, $[\eta^5\text{-}(C_5(CH_3)_5)Fe(\mu\text{-}NO)]_2$, $[\eta^5\text{-}(C_5H_5)Ru(\mu\text{-}NO)]_2$ and $[\eta^5\text{-}(C_5(CH_3)_5)Co(\mu\text{-}CO)]_2$ |
| A. L. Sargent and **M. B. Hall** | 1799 | Linear semibridging carbonyls—III. Carbonyl and thiocarbonyl ligands as four-electron donors |
| **J. S. Bradley, S. Harris,** E. W. Hill and M. A. Modrick | 1809 | The syntheses, molecular and electronic structures of two $\mu^4$-vinylidene tetrairon clusters |
| R. G. Abbott, **F. A. Cotton** and L. R. Falvello | 1821 | Multiply-bonded dimetal fluoroalkoxides—II. The disordered structure of $Mo_2(OC(CF_3)_3)_4(NMe_2)_2$ and its implications as to rearrangement by an internal flip |
| **M. H. Chisholm,** C. E. Hammond, J. C. Huffman and J. D. Martin | 1829 | Twelve-electron tetranuclear tungsten alkoxide clusters are not tetrahedral. Preparation, structure and bonding in $W_4(O)(OPr^i)_{10}$ and $W_4(O)(Cl)(OPr^i)_9$. Comparisons with the bonding in carbonyl clusters |
| W. G. Van Der Sluys, **A. P. Sattelberger** and M. W. McElfresh | 1843 | Uranium alkoxide chemistry—V. Synthesis, characterization and interconversion of uranium(IV) tert-butoxide complexes |

| | | |
|---|---|---|
| Wei-Xiong Wu, **Xiao-Zeng You,** An-Bang Dai and Shou-Ping Jing | 1849 | INDO/GIAO calculations of the NMR shielding constant including *d* orbitals |
| **M. C. Milletti** and M. D. Curtis | 1855 | An investigation of the electronic factors that influence structural differences between *cis*-$(CpMoCl)_2(\mu,\eta^4\text{-}Ar_4C_4)$ (Ar = *p*-tolyl or phenyl) and *trans*-$(CpNbCO)_2(Ph_2C_2)_2$ |
| G. Marinelli, W. E. Streib, J. C. Huffman, **K. G. Caulton,** M. R. Gagné, J. Takats, M. Dartiguenave, C. Chardon, S. A. Jackson and **O. Eisenstein** | 1867 | The origin of structural variety of alkyne complexes of $d^8$ metals. An example of structural isomerism |
| J. Chen, L. M. Daniels and **R. J. Angelici** | 1883 | Reactions of the $\eta^2$- and $\eta^4$-isomers of Cp*Ir(2,5-dimethylthiophene) with phosphines, CO and $H_2$ |
| **P. M. Treichel,** R. A. Crane and K. J. Haller | 1893 | Synthesis and crystal structures of two diruthenium polysulphide complexes |
| R. L. Johnston and **R. Hoffmann** | 1901 | The Kagomé net: band theoretical and topological aspects |
| C. J. Murphy and **A. B. Ellis** | 1913 | The coordination of mono- and diphosphines to the surface of cadmium selenide |
| **R. L. DeKock,** M. A. Peterson, L. K. Timmer, E. J. Baerends and P. Vernooijs | 1919 | A theoretical study of the linear versus bent geometry for several $MX_2$ molecules: $MgF_2$, $CaH_2$, $CaF_2$, $CeO_2$ and $YbCl_2$ |
| **K. A. Schugart** | 1935 | Atom site preference in $S_4N_4$ |
| **E. C. Constable** and **C. E. Housecroft** | 1939 | The electronic structure of some ruthenium(II) complexes related to $[Ru(bipy)_3]^{2+}$: an investigation of the stepwise replacement of *N,N*-donors by *C,N*-donors |
| P. D. Harvey and **H. B. Gray** | 1949 | Emission lifetimes of binuclear ($d^{10}$–$d^{10}$) palladium and platinum complexes |
| **T. P. Fehlner** | 1955 | On the energetics of the formation of E—H—M from M—H—M interactions on transition metal clusters |
| C. S. J. Chang, A. Rai-Chaudhuri, D. L. Lichtenberger and **J. H. Enemark** | 1965 | He I valence photoelectron spectra of oxomolybdenum(V) complexes containing diolato or alkoxide ligands |
| X. Y. Zhou and **N. M. Kostić** | 1975 | Steric effects on the selectivity of protein labelling with chelate complexes of platinum(II) |
| **B. K. Teo** and H. Zhang | 1985 | Counting electrons and rationalizing structures of clusters and clusters of clusters |
| **B. E. Bursten,** M. G. Gatter and K. I. Goldberg | 2001 | Valence orbital energetics as a tool for organometallic synthesis: on the scarcity of two-legged piano-stool complexes |
| | | *Announcements* |
| | I | Polyhedron Prize for Creativity in Inorganic Chemistry (Gold Medal plus U.S. $10,000) |
| | II | Annual Polyhedron Publication Award |

NUMBER 17


i Contributors to this issue

ii Deposition of crystallographic data

**K. K. Pandey,** D. T. Nehete and R. B. Sharma — 2013 — Square planar and square pyramidal complexes of rhodium(II)

**Liu Guofa,** Na Chongwu, Li Bin and Mao Kunyuan — 2019 — Complexes of lanthanide nitrates with a Schiff base derived from *o*-vanillin and *p*-toluidine

**Ben-Yao Liu,** Gao-Yang Xie, Yih-Tong Ku and Xin Wang — 2023 — X-ray crystal structure of guanidinium hexamolybdobis(*o*-nitrophenylarsonate)monohydrate, $(CN_3H_6)_5[(o\text{-}NO_2C_6H_4As)_2Mo_6O_{25}H]\cdot H_2O$

**A. A. El-Asmy,** T. Y. Al-Ansi, R. R. Amin and M. Mounir — 2029 — Spectral, magnetic and electrical properties of 1-succinyl bis(4-phenylthiosemicarbazide) complexes

**M. C. R. M. P. Basto,** M. J. P. Ferreira, E. F. A. C. Pereira and A. A. S. C. Machado — 2035 — Copper(II) complexes with 1-(2-carbamylethyl)-2-alkylimidazoles and oxyanions

**B. L. Khandelwal,** A. K. Singh, V. Srivastava, D. C. Povey and G. W. Smith — 2041 — Synthesis and X-ray crystal structure of a mercury(II)–telluroamine complex. Monodentate behaviour by a potentially bidentate hybrid telluride ligand, $1\text{-}(NMe_2)\text{-}2\text{-}(TeC_6H_4\text{-}4\text{-}OEt)\text{-}4\text{-}MeC_6H_3$

**R. Dreos Garlatti** and G. Tauzher — 2047 — Kinetics and mechanism of ligand exchange reactions of the methylbis(dimethylglyoximato)rhodium(III) complex in non-coordinating solvent

P. I. Clemenson, **A. E. Underhill,** A. Kobayashi and H. Kobayashi — 2053 — The synthesis and solid-state properties of the salts of $[M(S_2C_2(CN)_2)_2]^{2-}$ (where M = Ni, Pd or Pt) with small Group I and Group II cations, including the crystal structure of $Rb_2[Ni(S_2C_2(CN)_2)_2]\cdot H_2O$

**O. Carugo,** C. Bisi Castellani and M. Rizzi — 2061 — Influence of the complexation of copper(II) on the structure and reactivity of 4-hydroxy-6-methyl-3-[3-dimethylaminoacryloyl]-2H-pyran-2-one

R. S. Hay-Motherwell, **G. Wilkinson,** B. Hussain-Bates and **M. B. Hursthouse** — 2071 — Synthesis and reactions of tris(tetramethylethylenediamine-lithium)hexamethylmetallates of rhodium, iridium and ruthenium(III) and of hexakis(neopentyl)($\mu$-oxo)dirhodium(IV). X-ray crystal structures of *fac*-$RhMe_3(CO)(Me_2NCH_2CH_2NMe_2)$, *fac*-$RhMe_3(C_4H_4S)(Me_2NCH_2CH_2NMe_2)$, *fac*-$RhMe_3(PMe_3)_3$ and $[(Me_3CCH_2)_3Rh]_2O$

A. Gutierrez, **G. Wilkinson** B. Hussain-Bates and **M. B. Hursthouse** — 2081 — *t*-Butylimido and *t*-butylimido oxo aryls of rhenium. X-ray crystal structures of $Re(NBu^t)_2(2,6\text{-}Me_2C_6H_3)_2$, $Re(NBu^t)(2,4,6\text{-}Me_3C_6H_2)(C_{27}H_{32})$, $Re(NBu^t)_3(2,4,6\text{-}Me_3C_6H_2)$, $[(Bu^tN)Br(2,4,6\text{-}Me_3C_6H_2)Re(\mu\text{-}NBu^t)(\mu\text{-}O)\overline{Re(OC_6H_2Me_2CH_2)(NBu^t)}]$, $[Re(NBu^t)(O)Ar(\mu\text{-}O)]_2$, Ar = 2,6-$C_6H_3$ and 2,4,6-$C_6H_2$

**M. Bochmann,** A. J. Jaggar, M. B. Hursthouse and M. Mazid — 2097 — Cationic bis(cyclopentadienyl)titanium complexes. The synthesis and structure of $[Cp^*_2Ti(OH)(HN{=}CPh_2)]BPh_4\cdot Et_2O$

J. Costa Pessoa, L. F. Vilas Boas and **R. D. Gillard** — 2101 — Oxovanadium(IV) and amino acids—IV. The systems L-cysteine or D-penicillamine + $VO^{2+}$; a potentiometric and spectroscopic study

**R. D. Gillard,** L. R. Hanton and S. H. Mitchell — 2127 — Adducts of coordination compounds—XV. The structure of *trans*-$[Rh(py)_4Cl_2][Ag(ONO_2)_2]$, a salt of the dinitratoargentate(I) ion, $[Ag(ONO_2)_2]^-$

**P. K. Baker** and K. R. Flower — 2135 — The synthesis and bridge-cleavage reactions of the novel dicationic iodo-bridged dimer $[\{W(\mu\text{-}I)(CO)\{Ph_2P(CH_2)\text{-}PPh_2\}(\eta^2\text{-}MeC_2Me)\}_2][BF_4]_2$

**L. D. Field,** A. V. George and T. W. Hambley — 2139 — Synthesis and structure of dichlorodi-[1,2-bis(dimethylphosphino)ethane]iron(III) tetrachloroferrate(III), $[Fe(DMPE)_2Cl_2]^+[FeCl_4]^-$

**Zhongzhi Wu,** Feiming Zhao and Zhennan Zhou — 2143 — Synthesis and thermal stability of mixed-ligand lanthanide complexes involving both cyclopentadienyl and two different chelate ligands—trifluoroacetato and either 8-quinolinolato or *o*-aminophenolato ligands

B. V. Prelesnik, R. Herak, Z. Tomić, K. Andjelković, M. J. Malinar and **N. Juranić** — 2149 — Aminocarboxylato chelate ligand conformation influence on the optical activity of cobalt(III) complexes—III. *S*-valinato ligand conformation in the crystal structure of $\Delta$-*cis*$(NO_2)$,*trans*$(NH_2)$-silver(I)-dinitrobis(*S*-valinato)cobaltate(III)

D. S. Pandey, R. L. Mishra, A. Mishra and **U. C. Agarwala** — 2153 — Reactions of $[RuH(CO)Cl(EPh_3)_3]$ (E = P, As) and $[Ru(\eta^5\text{-}C_5H_5)ClL_2]$ $[L_2 = (PPh_3)_2$, $(AsPh_3)_2$, dppe, dppm] with 4-cyanopyridine, 1,4-dicyanobenzene and 1,4-dicyanobutene

A. Gutierrez-Alonso, **L. Ballester-Reventos,** V. Perez-Garcia and C. Ruiz-Valero — 2163 — Cyclopentadienylruthenium complexes with sulphur donor ligands—III. Coordinative ability of P,S-donor ligands. X-ray structure of $Ru(\eta\text{-}CH_3C_5H_4)(Ph_2PCSNPh)(PPh_3)$

K. C. Malhotra, S. C. Chaudhry, A. V. S. Raja Rao and **N. Sharma** — 2171 — A study of the interaction of di-$\mu$-phenoxobis(dichlorophenoxo)molybdenum(V) with aliphatic amines

*Communications*

E. Zych and **J. Drożdżyński** — 2175 — Preparation of uranium tribromide by thermal vacuum decomposition of $NH_4UBr_4 \cdot 1.5CH_3CN \cdot 6H_2O$

**G. Kura** — 2177 — Alkaline hydrolysis of linear tetra-, hexa- and octaphosphate

**J. Forniés,** F. Martínez, R. Navarro and E. P. Urriolabeitia — 2181 — Synthesis and X-ray crystal structure of $[Pd(C_6F_5)(\eta^2\text{-}\{(Ph_2P)_2C\})(PPh_3)]$, a mononuclear compound containing $\eta^2$-tris(diphenylphosphine)methanide

R. A. Kresinski, **C. J. Jones** and **J. A. McCleverty** — 2185 — Cyclopentadienyl replacement by trispyrazolylborate and the syntheses of $M(\eta^5\text{-}C_5H_5)\{HB(C_3H_3N_2)_3\}X_2$ (M = Hf, X = Cl; M = Zr, X = Cl, OPh, $OC_6H_4$-4-$NO_2$, $OC_6H_4$-4-OMe, $OC_6H_4$-2-Ph)

**H. G. Ang** and C. H. Koh — 2189 — Synthesis and properties of polyfluoroalkoxygermanes

*Book Review*

**A. G. Davies** — 2191 — Gmelin Handbook of Inorganic Chemistry. Sn—Organotin Compounds, Part 17. By H. Schumann and I. Schumann

*Announcements*

I — Polyhedron Prize for Creativity in Inorganic Chemistry (Gold Medal plus U.S. $10,000)

II — Annual Polyhedron Publication Award

**NUMBER 18**

i — Contributors to this issue

ii — Deposition of crystallographic data

N. H. Tran Huy, L. Ricard and **F. Mathey** — 2193 — Stepwise conversion of a five- into a nine-membered phosphametallacycle via two insertions of alkyne into a chromium–carbon double bond

| | | |
|---|---|---|
| B. Fischer, H. Preut, **B. Lippert,** H. Schöllhorn and U. Thewalt | 2199 | Alkali–nucleobase interactions: involvement of exocyclic oxygens of 1-methyluracil and 1-methylthymine in $Na^+$ binding |
| J. J. Byers, W. T. Pennington, **G. H. Robinson** and **D. C. Hrncir** | 2205 | Alkylsilazalanes. Reaction of trimethylaluminium with silazanes: synthesis and molecular structure of $[Al(CH_3)_2]_2[C_{12}H_{32}N_2Si_4]$ and $[Al(CH_3)_2]_2[C_8H_{28}N_2Si_4]$ |
| J. Takacs, P. Kiprof and **W. A. Herrmann** | 2211 | Multiple bonds between main group elements and transition metals—LXXXI. Condensation reactions of high-valent pentamethylcyclopentadienyl rhenium complexes with thiophenol and derivatives: synthetic and structural aspects |
| **B. F. G. Johnson,** J. Cook, D. Ellis, S. Hefford and A. Whittaker | 2221 | Mechanistic features of molecular rearrangements |
| **G. A. Lawrance,** M. Maeder, M. A. O'Leary and F.-H. Woon | 2227 | Macromonocycle formation from copper(II)- or nickel(II)-directed condensation of linear tetraamines and formaldehyde with various nitro-carbon acids |
| **P. K. Baker** and K. R. Flower | 2233 | Synthesis, spectroscopic properties and barriers to but-2-yne rotation of the new cationic phosphine–but-2-yne complexes, $[WI(CO)L\{Ph_2P(CH_2)PPh_2\}(\eta^2\text{-}MeC_2Me)][BF_4]$ {L = $PMe_3$, $PMe_2Ph$, $PMePh_2$, $PPh_3$, $PEtPh_2$, $PEt_2Ph$, $PEt_3$, $P^nPr_3$, $P^nBu_3$, $P(CH_2CH{=}CH_2)Ph_2$ and $[Fe(\eta^5\text{-}C_5H_5)(\eta^5\text{-}C_5H_4PPh_2)]$} |
| **P. K. Bhattacharya,** M. R. Ullah, R. A. Khalil, S. J. Kitchen and D. E. Fenton | 2239 | The solution stability of binary and ternary complexes involving oxaazamacrocyclic ligands |
| **R. K. Ray** | 2245 | Mixed-ligand complexes—II. (Methioninato)ethylenedibiguanide cobalt(III) salts |
| A. K. Deb, S. Choudhury and **S. Goswami** | 2251 | New, stable, chelated, tetracoordinated silver(I) complexes of the 2-(arylazo)pyridine ligand system: synthesis, characterization and assessment of bonding and structure |
| **W. Grzybkowski** | 2257 | Variation in stability of monohalide complexes and some properties of the solvated cations within the $Mn^{2+}$–$Zn^{2+}$ series |
| **K. Mochida,** T. Kugita and Y. Nakadaira | 2263 | UV and NMR studies of alkyl-substituted germyl anions |
| S. R. Boone and **C. G. Pierpont** | 2267 | Electron distribution within bis(quinone)ruthenium complexes. Structural characterization on delocalized (bipyridine)bis(quinone)ruthenium and on the localized *trans*-bis(3-chloropyridine)bis(3,5-di-tert-butyl-1,2-semiquinone)ruthenium(III) cation |
| N. Davison and **W. R. McWhinnie** | 2273 | The formation of cobalt and nickel complexes on clay surfaces |
| **Xiaojing Li,** Hui Wanyan, Wenji Dong and Rudong Yang | 2285 | Synthesis of novel mixed-ligand complexes of lanthanide ions with 1,4-bis-(1′-phenyl-3′-methyl-5′-pyrazolone-4′)-1,4-butanedione and 1,10-phenanthroline and their UV, IR, $^1H$ NMR, fluorescence and thermal analysis studies |
| **V. C. Gibson,** T. P. Kee and A. Shaw | 2293 | The use of silylethers and silylthioethers in syntheses of oxohalide and thiohalide compounds of molybdenum and tungsten |
| **H. A. Hodali** and R. A. El-Zaru | 2299 | Substituent effects on the oxidation of benzoins by the octacyanomolybdate(V) ion |
| **T. S. A. Hor** and L.-T. Phang | 2305 | Substituted metal carbonyls—XIV. Polynuclear heterometallic complexes of Cr, Mo, W and Mn supported by singly-bridging 1,1′-bis(diphenylphosphino)ferrocene |
| **A. M. El-Hendawy** | 2309 | Complexes of osmium(III) derived from O,O-donor ligands |

*Communication*

M. Nieuwenhuyzen, **W. T. Robinson** and **C. J. Wilkins** 2315 The chain–polymeric structure of the cobalt chloride pyridine-N-oxide complex $[CoCl_2(pyo)(H_2O)]_n$

**NUMBER 19**

i Contributors to this issue

ii Deposition of crystallographic data

iii Announcement: Polyhedron Reports

**POLYHEDRON REPORT NUMBER 33**

**K. G. Caulton, G. Davies** and **E. M. Holt** 2319 Synthesis, molecular structures, properties and reactions of halo- and carbonyl(amine)copper(I) complexes

---

**R. Bilewicz** and M. Pietraszkiewicz 2353 Synthesis and redox properties of a copper(II) complex of N,N′,N″,N‴-tetrakis(2-quinolinemethyl-1-oxide)-1,4,8,11-tetraazacyclotetradecane

**E. D. Jemmis, P. N. V. Pavan Kumar** and G. Narahari Sastry 2359 Molecular orbital study of the structure and stability of transition metal polyhedral borane complexes. Position of bridging hydrogens

Lu Tongbu, Gan Xinmin, Tang Ning and **Tan Minyu** 2371 Studies on rare earth complexes with crown ethers—XIX. Synthesis and characterization of the complexes of lanthanide thiocyanates with dibenzo-24-crown-8

**P. J. Toscano,** K. J. Fordon, D. Macherone, S. Liu and J. Zubieta 2375 Novel square pyramidal copper(II) complexes of the stereospecific linear NSNN tetradentate ligand, *N*-[(2-pyridyl)methyl]-2-[(2-aminoethyl)thio]acetamide (pygeH). The crystal structures of [Cu(pyge)X] (X = Br, $N_3$)

**R. D. Adams,** G. Chen, M. P. Pompeo and S. Sun 2385 Cluster synthesis—XXVII. New sulphido osmium carbonyl cluster complexes from the pyrolysis of $Os_6(CO)_{16}(\mu_4\text{-}S)(\mu_3\text{-}S)$

**E. C. Alyea, G. Ferguson,** K. J. Fisher, R. A. Gossage and M. C. Jennings 2393 A $^{95}$Mo NMR study of bis[pentacarbonylmolybdenum(0)] bridging ditertiary phosphine complexes. The crystal structure of $[Mo(CO)_5]_2(\mu\text{-}Ph_2PCH_2CH_2CH_2PPh_2)$

A. R. Butler, **C. Glidewell** and S. M. Glidewell 2399 Formation of the heptanitrosyltri-$\mu_3$-thioxotetraferrate(1–) anion, $[Fe_4S_3(NO)_7]^-$ by capture of biological sulphur in reactions with iron(II) and nitrite

E. J. M. Hamilton and **A. J. Welch** 2407 Synthesis and molecular structure of [10-*endo*-($Ph_3PAu$)-7,8-*nido*-$C_2B_9H_{11}$]$^-$: structural patterns in $[C_2B_9H_{11}X]^-$ anions (X = $H^+$, $AuPPh_3^+$, $CuPPh_3^+$)

A. A. Danopoulos, A. R. Wills and **P. G. Edwards** 2413 The synthesis of tridentate dialkylamino ligands containing tertiary phosphorus or arsenic donors

J. Sabolović and **N. Raos** 2419 Simulation of plasticity of a copper(II) coordination polyhedron with a force field based on coulombic interactions: conformational analysis of copper(II) chelates with $\alpha$-amino acids

**G. T. Hefter** 2429 Stability constants for the lead(II)–halide systems

*Communication*

M. M. Monzyk and **R. A. Holwerda** 2433 Cyclic voltammetric studies of pentacyano(phosphine)ferrate(II) complexes

*Announcements*

I Polyhedron Prize for Creativity in Inorganic Chemistry (Gold Medal plus U.S. $10,000)

II Annual Polyhedron Publication Award

NUMBER 20

i Contributors to this issue

ii Deposition of crystallographic data

Z. Khatoon and **Kabir-ud-Din** 2437 Potentiometric investigations on the cadmium(II)–amino acid–imidazole systems (amino acid = glycine, DL-α-alanine or DL-valine)

**A. El-Dissouky** and A. Z. El-Sonbati 2443 Complexing ability of bis(phenyl-2-picolylketonato)copper(II) towards different metal(II) and metal(III) salts

**K. L. Madhok** and C. Gupta 2449 Characterization and electrical properties of $MoO_2Cl_2$ complexes with N-aryl-N′-(substituted thiazolyl) thioureas and ureas

**V. K. Manchanda** and P. K. Mohapatra 2455 Complexation of europium(III) and americium(III) with ionizable macrocyclic ligands

**E. C. Alyea**, G. Ferguson, M. Jennings, B. Li, Z. Xu, X. You and S. Liu 2463 Some copper(I) and copper(II) complexes of two new potentially heptadentate tripodal Schiff base ligands

**W.-K. Wong**, F. L. Chow, H. Chen, R.-J. Wang and **T. C. W. Mak** 2469 Preparation and reactivity of *cis*-bis(cyclopentadienyldiphenylphosphine)(tetracarbonyl)molybdenum and *cis*-[1,3-bis(diphenylphosphino)dicyclopentadiene](tetracarbonyl)molybdenum. X-ray crystal structure of $2[(C_5H_5)Mo]_2(\mu\text{-}PPh_2)_2(CO)(O)\cdot C_6H_{14}$

M. Di Vaira, D. Rovai and **P. Stoppioni** 2477 Addition of $RHg^+$ fragments to P—P bonds of heteroatomic clusters

R. L. Beddoes, D. Collison, **F. E. Mabbs** and M. A. Passand 2483 Synthesis and characterization of some β-diketonate derivatives of hydrotris(3,5-dimethylpyrazolyl)boratooxovanadium(IV). The crystal and molecular structure of hydrotris(3,5-dimethylpyrazolyl)borato pentane-2,4-dionato oxovanadium(IV)

**M. Fujiwara**, J. Matsuda and H. Wakita 2491 Preparation of terephthaloyl derivatives of cyclic triamines and their selectivities toward copper(II), nickel(II) and zinc(II) ions

N. Padmaja, M. Saratchandra Babu, G. Nageswara Rao, R. Sambasiva Rao and **K. V. Ramana** 2497 Effect of urea on the speciation of 1,10-phenanthroline complexes of toxic metal ions—computer augmented modelling studies

**P. K. Baker** and K. R. Flower 2507 Synthesis and spectral properties of the novel dicationic bimetallic phosphine-bridged compounds $[W_2I_2(\mu\text{-L—L})(CO)_2(dppm)_2(\eta^2\text{-MeC}_2\text{Me})_2][BF_4]_2$ {dppm = $Ph_2P(CH_2)PPh_2$; L—L = $Ph_2P(CH_2)_nPPh_2$, $n$ = 1–6 or $[Fe(\eta^5\text{-}C_5H_4PPh_2)_2]$}

S. Zhang and **G. R. Dobson** 2511 Octahedral metal carbonyls—LXXIII. Displacement of aromatic solvents (solv) from $(solv)Cr(CO)_5$ complexes generated after flash photolysis: modes of bonding and mechanism

S. Ganguly and **D. M. Roundhill** 2517 Conversion of long-chain terminal alcohols and secondary amines into tertiary amines using ruthenium(II) tertiary phosphine complexes as homogeneous catalysts

J. D. McCurry and **J. E. Roberts** 2527 Synthesis of new symmetrical *meso*-substituted porphyrins: tetra-6-quinoline porphyrin, tetra-6-[N-methyl($^{13}$C) quinoline] porphyrin tetraiodide salt and their copper(II) complexes

L. M. Clarkson, K. McCrudden, **N. C. Norman** and L. J. Farrugia 2533 Synthetic and structural studies on cobalt carbonyl complexes containing indium

*Communication*

H. J. Banbery, W. Hussain, I. G. Evans, **T. A. Hamor, C. J. Jones, J. A. McCleverty,** H.-J. Schulte, B. Engles and **W. Kläui** 2549 The syntheses of high oxidation state metal complexes containing the tripodal ligand $[(\eta^5\text{-}C_5H_5)Co\{P(OMe)_2(=O)\}_3]^-$ and the X-ray crystal structure of $[(\eta^5\text{-}C_5H_5)Co\{P(OMe)_2(=O)\}_3ReO_3]$

*Announcements*

I Polyhedron Prize for Creativity in Inorganic Chemistry (Gold Medal plus U.S. $10,000)

II Annual Polyhedron Publication Award

**NUMBER 21**

i Contributors to this issue

ii Deposition of crystallographic data

iii Announcement: Polyhedron Reports

**POLYHEDRON REPORT NUMBER 34**

**F. A. Cotton** and J. Czuchajowska 2553 Recent developments in the chemistry of mono- and dinuclear complexes of the macrocyclic dianion, 5,7,12,14-tetramethyldibenzo[b,i][1,4,8,11]tetraazacyclotetradecine

---

**A. Vogt,** A. Kufelnicki and **B. Jeżowska-Trzebiatowska** 2567 Studies on the cobalt(II)–dipeptide–imidazole system; a new dioxygen carrier

**L. A. P. M. Hall** 2575 The synthesis and characterization of di-$\mu$-(methoxy)-bis-squaratocopper(II)

**Shiuh-Tzung Liu,** Chong-Lung Tsao, Ming-Chu Cheng and Shie-Ming Peng 2579 Tripodal ligands with mixed donors. Synthesis of 2-diphenylphosphinomethyl-2-phenylthiomethyl-1-methoxypropane (PSO) and its transition metal complexes

**L. Szterenberg** 2585 Electronic structure of thiochloroanions of molybdenum

**G. Bruno,** S. Campagna, **M. Cusumano,** A. Giannetto and V. Ricevuto 2591 Properties in solid and solution of $[Pd(PPr^n_3)(NO_2)_3][As(C_6H_5)_4]$

**N. D. Yordanov,** G. Gochev, O. Angelova and J. Macicek 2597 EPR investigations on bis(dithiophosphinato)copper(II) complexes magnetically diluted in the corresponding nickel(II) single crystals and X-ray crystal structure of bis(di-n-propyldithiophosphinato)nickel(II)

M. P. Gamasa, **J. Gimeno,** E. Lastra, J. M. Rubio Gonzalez and S. Garcia-Granda 2603 Synthesis and characterization of novel triply-bridged binuclear copper(I) complexes containing [3,6-bis(3,5-dimethylpyrazol-1-yl)pyridazine] (PPDMe) as a tetradentate bridging ligand: X-ray crystal structure of $[Cu_2(\mu\text{-DPPM})_2(\mu\text{-PPDMe})][BF_4]_2$ [DPPM = bis(diphenylphosphino)methane]

**T. Nakashima,** H. Tanaka, G. Sugihara and H. Waki — 2609 — Stability constants of dodecaoxohexaphosphate(III) complexes with divalent metal cations in potassium chloride solution

M. A. Khan, J. Meullemeestre, M. J. Schwing and **F. Vierling** — 2613 — Theoretical aspects of an equilibrium study in the non-dissociating molecular solvent acetic acid

D. S. Bader and **M. M. Turnbull** — 2619 — Rotational barriers in dialkylaminochlorosphines: steric effects on the preparation of cage complexes

A. A. Danopoulos, Wa-Hung Leung, **G. Wilkinson,** B. Hussain-Bates and **M. B. Hursthouse** — 2625 — t-Butylimido complexes of chromium. X-ray crystal structures of $Cr(NBu^t)_2(PMe_2Ph)Cl_2$ and $[Cr(NBu^t)_2(C_5H_4N)_2(\eta^1\text{-}O_3SCF_3)]\text{-}O_3SCF_3$

**J. T. Mague** — 2635 — Binuclear complexes containing a dimetallated olefin. The crystal and molecular structures of $[Ir_2(CO)_2(C_6H_5)(CNC(CH_3)_3)(\mu\text{-}RC{=}CR)((C_6H_5)_2PCH_2P(C_6H_5)_2)]B(C_6H_5)_4\cdot 0.4(CH_3)_2CO$ and $[Rh_2Cl_2(CO)_2(\mu\text{-}RC{=}CR)((C_6H_5)_2PC_5H_4N)_2]\cdot 2C_2H_4Cl_2$ ($R = CO_2CH_3$)

N. Atkinson, A. J. Lavery, A. J. Blake, G. Reid and **M. Schröder** — 2641 — Iron macrocyclic complexes: the synthesis and single crystal X-ray structure of $[Fe([18]aneN_2S_4)](BPh_4)_2\cdot 2MeCN\cdot 1/2MeOH$ {[18]aneN$_2$S$_4$ = 1,4,10,13-tetrathia-7,16-diazacyclooctadecane}

*Communications*

**T. B. T. Ha,** J.-P. Souchard, F. L. Wimmer and N. P. Johnson — 2647 — Determination of *cis–trans* isomers of amine and pyridine platinum(II) complexes by $J$(Pt—H) coupling constants

K. S. Ratliff, P. E. Fanwick and **C. P. Kubiak** — 2651 — Transmetallation of a binuclear complex of nickel(0): synthesis and molecular structure of $[NiPt(\mu\text{-}CNMe)(CNMe)(Ph_2PCH_2PPh_2)_2Cl][Cl]$

R. Han and **G. Parkin** — 2655 — Reaction of $O_2$ with $\{\eta^3\text{-}HB(3\text{-}Bu^tpz)_3\}MgCH_2Si(CH_3)_3$: facile Si—C bond cleavage and formation of $\cdot\{\eta^3\text{-}HB(3\text{-}Bu^tpz)_3\}\text{-}MgOSi(CH_3)_3$

P. F. Kelly, A. M. Z. Slawin, D. J. Williams and **J. D. Woollins** — 2659 — The first metal complexes containing tellurium–sulphur–nitrogen anions; X-ray structure of $[Pt(TeSN_2H)(PMe_2Ph)_2][BF_4]$

*Announcements*

I — Polyhedron Prize for Creativity in Inorganic Chemistry (Gold Medal plus U.S. $10,000)

II — Annual Polyhedron Publication Award

**NUMBER 22**

i — Contributors to this issue

ii — Deposition of crystallographic data

R. Bariz, **C. Brémard,** G. Nowogrocki and S. Sueur✠ — 2663 — Synthesis, spectroscopic and magnetic properties of copper(II) complexes of novel polyaza chain molecules

V. Salvadó, X. Ribas and **M. Valiente** — 2675 — The chemistry of iron in biosystems—IV. Complex formation between iron(III) and 5-sulphosalicylic acid, in aqueous solution

**M. M. Taqui Khan,** D. Chatterjee, A. Hussain and M. A. Moiz — 2681 — Kinetics and mechanism of the ligand substitution reaction of aquo-ethylenediaminetetraacetato complex of ruthenium(III) with 4,6-dimethyl-2-mercaptopyrimidine ligand in aqueous medium

| | | |
|---|---|---|
| **Yao-Kun Zhou** and Hong-Ming Chen | 2689 | The syntheses of mono-aromatic carboxylic derivatives of bis($\eta^5$-cyclopentadienyl)zirconium(IV) |
| **T. Rojo,** J. I. R. Larramendi, I. Duran, J. L. Mesa, J. Via and M. I. Arriortua | 2693 | Structure and spectroscopic study of an azide-copper(II) dinuclear complex: $[Cu(pymep)(N_3)]_2 \cdot 2H_2O$ |
| D. Marcos, J.-V. Folgado, **D. Beltrán-Porter,** M. T. Do Prado-Gambardella, S. H. Pulcinelli and R. H. De Almeida-Santos | 2699 | Spectroscopic studies and crystal structure of bis(N-2-pyridinylcarbonyl-2-pyridinecarboximidato)manganese(II) monohydrate: zero-field splitting parameters |
| S. K. Das, B. S. Tomar and **S. Prakash** | 2705 | Perturbed angular correlation studies of the Hf–EDTA complex |
| Yuan-Wei Chao, S. Polson and **D. E. Wigley** | 2709 | Preparation and properties of amido halide complexes of niobium and tantalum and their reactions with alkynes |
| **L. Carlton** and D. White | 2717 | Preparation and $^{199}$Hg NMR study of some mercury(II) thiolate complexes |
| U. Russo, M. Vidali and **B. Zarli** | 2721 | The preparation of the new compartmental ligand 1-(2-hydroxyphenyl)-3-(2-thiomethoxyphenyl)-1,3-propanedione and its interactions with metal ions |
| **D. Astruc,** M.-H. Desbois, M. Lacoste, F. Moulines, J.-R. Hamon and F. Varret | 2727 | Iron sandwiches as molecular reservoir materials: design, electronic properties and prospects |
| M. A. Romero, **J. M. Salas,** M. Simard, M. Quirós and **A. L. Beauchamp** | 2733 | Platinum group metal–ketoxime complexes: crystal structure of hydrogen *fac*-tris(dimethylviolurato)ruthenate(II) heptahydrate |
| **J. M. Vila,** M. Gayoso, J. J. Fernandez, J. M. Ortigueira and A. Suarez | 2741 | Reactivity of cyclometallated palladium(II) dimer complexes with diphosphines |
| **Yang Wei-Da** and Hu Yin-Ping | 2747 | Copper complexes of 2-thiouracil |
| A. Houlton, J. R. Dilworth, **R. M. G. Roberts, J. Silver** and **M. G. B. Drew** | 2751 | Ferrocenyl ligands—II. In search of redox-active ferrocenyl ligands. The preparation and characterization of two Schiff's base derivatives of 1,1′-diacetylferrocene. The crystal and molecular structure of the 2-pyridylhydrazone of 1,1′-diacetylferrocene |
| | | *Communications* |
| **W. C-K. Poon,** P. Dallin, B. F. G. Johnson, E. A. Marseglia and J. Tomkinson | 2759 | Inelastic neutron scattering study of hydride ligands in $[(\mu_2\text{-}H)_2Os_3(CO)_{10}]$: evidence for a direct H—H interaction |
| **M. L. H. Green,** P. Mountford, G. J. Smout and S. R. Speel | 2763 | New synthetic pathways into the organometallic chemistry of gallium |
| | | *Announcements* |
| | I | Polyhedron Prize for Creativity in Inorganic Chemistry (Gold Medal plus U.S. $10,000) |
| | II | Annual Polyhedron Publication Award |

NUMBER 23

i Contributors to this issue

ii Deposition of crystallographic data

iii Announcement: Polyhedron Reports

POLYHEDRON REPORT NUMBER 35

**R. J. Puddephatt,** L. Manojlovic-Muir and K. W. Muir — 2767 — Coordinatively unsaturated tripalladium and triplatinum clusters: models for reactions on metal surfaces

T. Sh. Kapanadze, Yu. V. Kokunov and **Yu. A. Buslaev** — 2803 — A $^{59}$Co NMR study of stereoisomerism of cobalt(III) complexes with polydentate aminochelate ligands

S. J. Brown, **A. F. Masters,** M. Vender, J. I. Sachinidis and **P. A. Tregloan** — 2809 — The oligomerization of lower olefins by catalysts derived from Ni(sacsac)($PBu_3$)Cl

R. S. Armstrong, T. Bell, **A. F. Masters,** M. A. Williams and A. L. Chaffee — 2815 — Fischer–Tropsch catalysts derived from surface confined $[H_nFeCo_3(CO)_{12}]^{n-1}$ ($n=0$, 1)

A. M. A. Bennett, **G. A. Foulds,** and D. A. Thornton — 2823 — Synthesis of heterogeneous olefin-oligomerization catalysts using homogeneous nickel-chelate complexes as a basis

**P. Karagiannidis,** P. Aslanidis, S. Papastefanou, D. Mentzafos, A. Hountas and A. Terzis — 2833 — Copper(I) complexes from $[Cu(PPh_3)_4]ClO_4$ and some heterocyclic thiones as ligands. The crystal structure of $[Cu(py2SH)_2(PPh_3)_2]ClO_4 \cdot 2CHCl_3$

**J. Pons,** X. López, E. Benet, **J. Casabó, F. Teixidor** and F. J. Sánchez — 2839 — Dinuclear $\mu$-pyrazole nickel(II), cobalt(II), cadmium(II) and zinc(II) complexes with dinucleating pyrazole-derived ligands

M. F. Cabral, J. Costa, R. Delgado, **J. J. R. Fraústo da Silva** and M. F. Vilhena — 2847 — Protonation and metal complexation studies on some oxa-diaza macrocyclic ligands

*Communications*

F. Mercier, L. Ricard and **F. Mathey** — 2859 — Synthesis and X-ray structural characterization of a ($\eta^3$-phosphaallyl)tungsten P-oxide

**M. Cano** and M. Panizo — 2863 — Formation of molybdenum–tin heterobimetallic complexes. Reactions of new $[(phen)\{P(4\text{-}XC_6H_4)_3\}Mo(CO)_3]$ (X = Cl, F, $CH_3$, $OCH_3$) compounds with tin(IV) halides and organohalides

K. Bertoncello, G. D. Fallon and **K. S. Murray** — 2867 — New binucleating amido ligands, synthesis and structures of copper(II) and manganese(III) complexes

*Announcements*

I Polyhedron Prize for Creativity in Inorganic Chemistry (Gold Medal plus U.S. $10,000)

II Annual Polyhedron Publication Award

**NUMBER 24**


i Contributors to this issue

ii Deposition of crystallographic data

**Zhang Hualin,** Li Peiyi, Wang Boyi, Wu Jianhua and Zheng Peiju 2873 Synthesis, characterization and structure of complexes of *o*-aminophenol-N,N,O-triacetic acid with cobalt(II), nickel(II), manganese(II) and zinc(II)

V. Kumar, **G. Aravamudan** and M. Seshasayee 2879 Interaction of heterocyclic thioamides with tellurium(II) and tellurium(IV). Syntheses and crystal structures of bis[2-(2-thioxo-1,3-thiazolidin-3-yl)-4,5-dihydro-1,3-thiazolium]hexabromotellurate(IV) and tris(1-methylimidazole-2-(3H)-thione)tellurium(II) bromide

B. P. Buffin and **T. G. Richmond** 2887 Coordination chemistry of chelating nitrogen ligands with tungsten carbonyl nitriles

M. Tonković, Š. Horvat, J. Horvat, S. Musić and **O. Hadžija** 2895 The complexes of iron(III) with D-glucopyranosyl esters of glycine

**Wai-Kwok Wong,** Fong Lung Chow, Hua Chen, Boon Wai Au-Yeung, Ru-Ji Wang and **T. C. W. Mak** 2901 Preparation and reactivity of $PhP(C_5Me_4H)_2$ and $Ph_2P(C_5Me_4H)$. X-ray crystal structures of $Mo(CO)_5[Ph_2P(C_5Me_4H)]$ and $(\eta^5\text{-}C_5Me_4H)Mo(CO)(\mu\text{-}PPh_2)_2Mo[(\eta^5\text{-}C_5Me_4)P(O)Ph_2](CO)\cdot 1/4C_6H_{14}$

A. J. Blake, A. Taylor and **M. Schröder** 2911 Copper thioether chemistry: synthesis and X-ray crystal structures of binuclear copper(I) complexes $[Cu_2(L)]^{2+}$ {L = [24]aneS$_8$, [28]aneS$_8$} incorporating octathia macrocycles

A. J. Blake, R. O. Gould, A. J. Holder, A. J. Lavery and **M. Schröder** 2919 Copper thioether chemistry: the synthesis and single crystal X-ray structures of $[Cu_2([18]aneS_6)(NCMe)_2](ClO_4)_2$ and $[Cu([9]aneS_3)(AsPPh_3)](ClO_4)$

A. J. Blake, G. Reid and **M. Schröder** 2925 Rhodium macrocyclic complexes: the synthesis and single crystal X-ray structure of $[Rh([18]aneN_2S_4)](PF_6)_3\cdot 3H_2O$ ([18]aneN$_2$S$_4$ = 1,4,10,13-tetrathia-7,16-diazacyclooctadecane)

A. J. Blake, G. Reid and **M. Schröder** 2931 Mercury macrocyclic complexes: the synthesis of $[Hg([18]aneN_2S_4)]^{2+}$ and $[Hg(Me_2[18]aneN_2S_4)]^{2+}$. The single crystal X-ray structure of $[Hg([18]aneN_2S_4)](PF_6)_2\cdot 4/3H_2O$

**A. E. Mauro,** S. I. Klein, J. S. Saldaña, C. A. De Simone, J. Zukerman-Schpector and E. E. Castellano 2937 Synthesis and X-ray studies of di-$\mu$-cyanato-bis[{cyanato(N,N-dimethylethylenediamine)}copper(II)]

**M. H. Chisholm,** J. C. Huffman, I. P. Parkin and W. E. Streib 2941 Preparation and characterization of $M_2(SeAr')_6$ and mixed ligand $M_2(OR)_2(SeAr')_4$ species (M = Mo,W)

S. J. Dossett, M. U. Pilotti and **F. G. A. Stone** 2953 Synthesis and crystal structure of the complex $[MoW(OEt)(\mu\text{-}CH_2)\{\mu\text{-}C(C_6H_4Me\text{-}4)C(Me)O\}(\eta^7\text{-}C_7H_7)(\eta^5\text{-}C_2B_9H_{10}Me)]$

**D. C. Bradley, M. B. Hursthouse,** A. A. Ibrahim, K. M. Abdul Malik, M. Motevalli, R. Möseler, H. Powell, J. D. Runnacles and **A. C. Sullivan** 2959 Synthesis and chemistry of the bis(trimethylsilyl)amido bis-tetrahydrofuranates of the group 2 metals magnesium, calcium, strontium and barium. X-ray crystal structures of $Mg[N(SiMe_3)_2]_2\cdot 2THF$ and related $Mn[N(SiMe_3)_2]_2\cdot 2THF$

A. A. Eagle, **C. G. Young** and E. R. T. Tiekink 2965 Reaction of the tetrasulphidomolybdenum(IV) complex LMo(NCS)(S$_4$) with dicarbomethoxyacetylene: X-ray structure of $LMo(NCS)\{S_2C_2(CO_2Me)_2\}$ [L = hydrotris(3,5-dimethylpyrazolyl)borate]

W. Vreugdenhil, J. H. van Diemen, R. A. G. de Graaff, **J. G. Haasnoot**, J. Reedijk, A. M van der Kraan, O. Kahn and J. Zarembowitch — 2971 — High-spin↔low-spin transition in [$Fe(NCS)_2$(4,4′-bis-1,2,4-triazole)$_2$]($H_2O$). X-ray crystal structure and magnetic, Mössbauer and EPR properties

**Shaohua Gou**, Xiaozeng You, Zheng Xu, Kaibe Yu and Zhongyuan Zhou — 2981 — Transition metal complexes of the Schiff bases derived from S-alkyldithiocarbazate with 2-pyridinecarboxaldehyde N-oxide—I. Synthesis, properties and structure of four-coordinate copper(II) complexes

M. M. Dawod, F. I. Khalili and **A. M. Seyam** — 2987 — Some actinide complexes of pyridin-, pyrrol-, furan- and thiophen-aldazine Schiff bases

i — Index for Volume 9